K/HS-134
REVISION 1

ORGDP

OAK RIDGE
GASEOUS
DIFFUSION
PLANT

MARTIN MARIETTA

RCRA FACILITY INVESTIGATION PLAN
K-1064 BURN AREA/PENINSULA STORAGE UNIT
OAK RIDGE GASEOUS DIFFUSION PLANT
OAK RIDGE, TENNESSEE

MAY 1989

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ITIN MARIETTA ENERGY SYSTEMS, INC.
THE UNITED STATES
ARTMENT OF ENERGY

MAY 1989

K/HS-134
Revision 1

RCRA FACILITY INVESTIGATION PLAN
K-1064 BURN AREA/PENINSULA STORAGE UNIT
(Unit Number R007)
OAK RIDGE GASEOUS DIFFUSION PLANT
OAK RIDGE, TENNESSEE

Prepared by the
Oak Ridge Gaseous Diffusion Plant
Oak Ridge, Tennessee 37831
operated by
MARTIN MARIETTA ENERGY SYSTEMS, INC.
for the
U. S. DEPARTMENT OF ENERGY
under contract DE-AC05-84OR21400

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1. INTRODUCTION

Within the confines of the Oak Ridge Gaseous Diffusion Plant (ORGDP) are hazardous waste treatment, storage, and disposal facilities; some are in operation while others are no longer in use. Most of these solid waste management units (SWMUs) are subject to assessment in accordance with the terms of Paragraph II.A.2 of the Resource Conservation and Recovery Act (RCRA) 1984 Hazardous and Solid Waste Amendments (Permit Number HWSA TN 001) and the Tennessee Department of Health and Environment (TDHE) RCRA Permit (Number TN1 890 090 003) for Building 7652 at the Oak Ridge National Laboratory (ORNL) because Section 3004(u) of RCRA addresses corrective actions for continuing releases from SWMUs. These units are referred to as RCRA 3004(u) units. Other sites fall under the jurisdiction of the mandates of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). However, at this time there are no regulatory drivers at the ORGDP for remedial investigation or remediation of CERCLA units. These requirements will be incorporated into the anticipated Interagency Agreement (IAG) between the Environmental Protection Agency (EPA), the TDHE, and the U. S. Department of Energy (DOE). This agreement is expected to be in effect prior to listing of the Oak Ridge Reservation (ORR) on the National Priorities Listing (NPL) of CERCLA.

Since both 3004(u) and CERCLA sites will be covered in the IAG, both types are included in the ORGDP Remedial Action Program. All activities will be addressed using the RCRA Facility Investigation (RFI) approach as described in the EPA document, RCRA Facility Investigation Guidance,[1] OSWER Directive 9502.00-6C, December 1987. The RFI plans for those units outlined in the ORNL RCRA Permit were submitted during calendar years 1987 and 1988.

This document is the site-specific RFI plan for the K-1064 Burn Area/Peninsula Storage Unit, an RCRA 3004(u) unit, providing detailed information for field studies involving data collection for remedial decisions under CERCLA, the Superfund Amendments and Reauthorization Act (SARA), and the National Contingency Plan (40 CFR 300). Contained within this site-specific document are geographical, historical, operational, geological, and hydrological data specific to the K-1064 Unit.

The potential for releases of contamination through the various media to receptors is addressed. A sampling plan is proposed to further determine the extent (if any) of contaminant release to the surrounding environment. Included are health and safety procedures to be followed when implementing the sampling plan.

The RCRA Facility Investigation Plan - General Document,[2] K/HS-132, (hereafter referred to as General Document) includes information applicable to all the ORGDP SWMUs and serves as a reference document for the site-specific RFI plan. Quality Control (QC) procedures for remedial actions occurring on the ORR are presented in the Environmental Surveillance Procedures Quality Control Program,[3] Martin Marietta Energy Systems, Inc. (Energy Systems), ESH/Sub/87- 21706(1), and quality assurance (QA) guidelines for ORGDP investigations are presented in the ORGDP Remedial Action Program QA Plan,[4] K/HS-231. Procedures for managing and displaying data collected from this RFI are summarized, in accordance with the ORGDP Remedial Action Program Data Management Plan,[5] K/HS-232. Groundwater monitoring procedures are implemented in accordance with the ORGDP Groundwater Protection Program Management Plan,[6] K/HS-258.

2. OBJECTIVES OF RCRA FACILITY INVESTIGATION PLANNING

2.1 OBJECTIVES

The RFI plan identifies actions necessary to determine the nature and extent (if any) of releases of hazardous and/or radioactive contamination from the K-1064 Unit. The plan summarizes existing site information and addresses the potential for contamination of soil, groundwater, surface water, and air.

2.2 EVALUATION CRITERIA

In order to prepare and implement a comprehensive sampling plan and to effectively evaluate analytical sampling results, evaluation criteria must first be established. Criteria for evaluating the extent of release of contaminants are based on existing state and federal regulatory guidance and best technical judgment.

The primary media of interest for the K-1064 Unit are surface water, groundwater, and soil. Under the ORGDP Groundwater Protection Program, groundwater data will be collected covering the parameters of interest listed in Table 2.2 of the General Document. Soil and surface water samples will be collected as a part of the RFI plan and analyzed for the contaminants described in Section 8 of this document.

2.3 SCHEDULE FOR SPECIFIC RFI ACTIVITIES

A Gantt chart representing the RFI sampling and analysis activities and analysis that will be performed and the duration of each activity is shown in Figure 2.1.

2.4 FEASIBLE ALTERNATIVES

Knowledge of feasible corrective measures has been used in preparing this RFI plan. Based on existing geologic, hydrologic, and contaminant source data, potential corrective measures for the K-1064 Unit have been identified and are shown in Table 2.1. This table is an indication of the types of corrective actions and may not indicate all available options at the time of remediation.

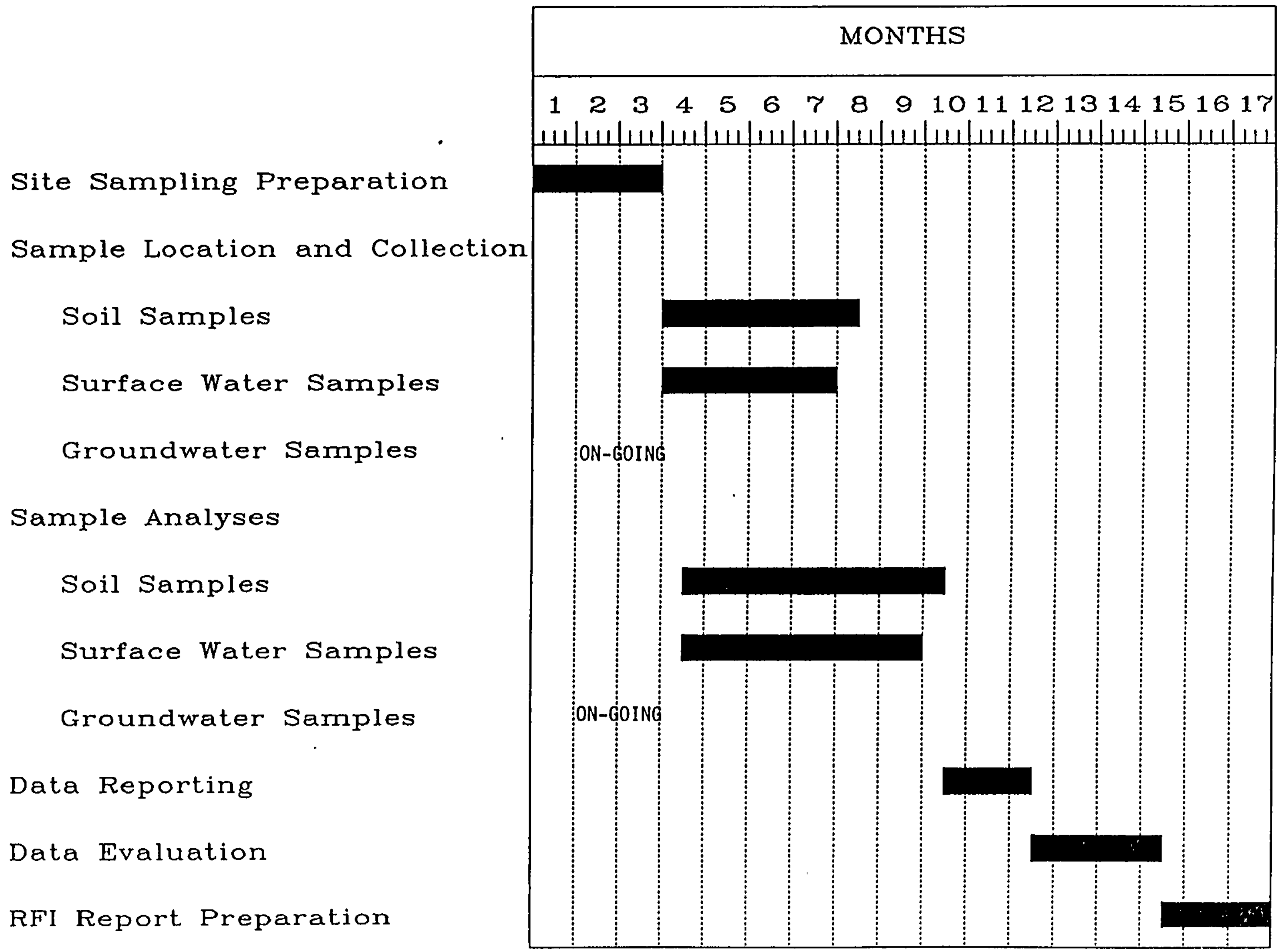

Fig. 2.1. RFI activities and their duration for the K-1064 Burn Area/Peninsula Storage Unit

Table 2.1. Potential corrective measures for K-1064 Burn Area/Peninsula Storage Unit

General Response Action	Technologies
Monitoring	Surveillance monitoring and analysis
Containment from surface water	Capping - Synthetic membranes, clay, asphalt, multimedia cap, concrete, chemical sealants/stabilizers; Revegetation - grasses
	Diversion systems - dikes, berms, ditches, and channels
Containment from groundwater	Subsurface collection drains - french drains, tile drains, pipe drains
	Vertical containment barriers - soil bentonite slurry wall, cement-bentonite slurry wall, vibrating beam, grout curtains, steel sheet piling
	Horizontal containment barriers (bottom sealing) - block displacement, grout injection
	Groundwater diversion pumping - well points, deep wells, suction wells, ejector wells
Removal of contaminated soil	Excavation - backhoe, dragline
	Treatment of removed soil - extraction, incineration, fixation in concrete
	Long-term storage or disposal of soil at an approved landfill

In addition, site remediation may necessitiate the use of one or more of the available options. These corrective measure will be reevaluated after the RFI report is completed.

2.5 RISK ASSESSMENT

The environmental and public health risks associated with the remedial action alternatives listed in Table 2.1 will be evaluated. This evaluation will consist of a characterization of contaminant sources, the environmental setting, the magnitude of release, pathways to human exposures, and characterization of risks, as addressed in Section 2.2 of the General Document. The site sampling plan has been designed to provide the data necessary for performing a risk assessment.

3. DESCRIPTION OF CURRENT CONDITIONS

3.1 GEOGRAPHICAL INFORMATION

The K-1064 Unit is located within the ORGDP on a peninsula that extends northward into Poplar Creek approximately three miles above its confluence with the Clinch River. The peninsula stands approximately 40 ft above the normal water stage of Poplar Creek (740 ft). A location map and photograph of the area are shown in Figures 3.1 and 3.2, respectively.

3.2 HISTORICAL INFORMATION

The K-1064 Unit contains approximately three acres of land that were used to burn and store waste solvents. Paint wastes, other organic wastes, and radioactively contaminated waste oil were also stored at the site. These materials were disposed of at the site during the 1950s and 1960s. Disposal operations involved burning solvents in an open metal container.

In the late 1960s and early 1970s, the area was used to store drums of solvents, organics (including polychlorinated biphenyl [PCB]), and radioactively contaminated waste oil. The records that were generated during the closeout of the unit indicate that there were 1,838 drums of waste (90,000 gallons) stored at the unit. These drums were removed and the unit was closed during 1979.

3.3 OPERATIONAL INFORMATION

During the drum storage operation in the 1960s and 1970s, the contents of the drums were sampled for PCBs and solvents. Drums containing less than five ppm PCBs and less than 1% solvents were removed from the K-1064 Storage Area and transferred to the Y-12 Plant where they were landfarmed. The drums that had greater than five ppm PCBs or one percent solvents were moved to diked areas in the K-1070-C/D Classified Burial Ground upon closure of the K-1064 area. The liquids were redrummed if necessary before storage at the classified burial grounds. After operations at K-1064 ceased and all drums were removed, the area was covered with fill dirt, graded, and revegetated.

KEY

K 101	PROCESS (VACANT)
K 131	FIELD MAINT SHOP & OFFICE
K 303 1 Thru K 312 3	K 25 PROCESS
K-402 1 Thru K 402 9	K 27 PROCESS
K-413	PRODUCT WITHDRAWAL
K 502 1 Thru K 502 3	K 29 PROCESS
K 601	MAINTENANCE TRAINING
K 602 1 Thru K 602 6	K 31 PROCESS
K 631	PROCESS TAILS
K 633	ORGDP TEST LOOP FACILITY
K 701	BOILER HOUSE (VACANT)
K 702	TURBINE ROOM & DISCH TUNNEL (VACANT)
K 704	K 25 MAIN SWITCH HOUSE
K 709	K 25 SWITCHYARD
K 710	SEWAGE TREATMENT
K 711	WELD TRAINING FACILITY
K 722	STORAGE WAREHOUSE
K 723	STORAGE WAREHOUSE
K 724	EXCESS STORAGE
K 725	WAREHOUSE (VACANT)
K 726	STORAGE BLDG
K 731	K 27 & K 29 SWITCH HOUSE (CONTROL ROOM)
K 732	K 27 & K 29 SWITCHYARD
K 735	STORAGE BUILDING
K 736	STORAGE BUILDING
K 761	K 31 SWITCH HOUSE (CONTROL ROOM)
K 762	K 31 SWITCHYARD
K 791	K 33 SWITCH HOUSE (CONTROL ROOM)
K 792	K 33 SWITCHYARD
K 796 A	MAINTENANCE STORAGE
K 801	INTAKE WATER PUMP HOUSE
K 801A	WATER TREATMENT PLANT
K-801B	CLARIFLOW TANK
K 801H	COOLING TOWER (PARTIAL BASIN ONLY)
K 802	RECIRCULATING WATER PUMP HOUSE
K 822	PUMP HOUSE
K 822A	COOLING TOWER
K 822B	COOLING TOWER
K 832	RECIRCULATING WATER PUMP HOUSE
K 832H	COOLING TOWER
K 861	K 31 COOLING TOWER
K 862	K 31 RECIRCULATING WATER PUMP HOUSE
K 891	RAW WATER PUMP HOUSE
K 892	FIRE WATER & RECIRC WATER PUMP HOUSE
K 892A	WATER TREATMENT PLANT CENTER
K 892B	WATER TREATMENT PLANT SOUTH
K 892C	WATER TREATMENT PLANT NORTH
K 892G	COOLING TOWER
K 892H	COOLING TOWER
K 892 J	COOLING TOWER
K 896	COOLING WATER TREATMENT PLANT
K 902 1 Thru K 902 8	K 33 PROCESS
K 1000	CONFERENCE ROOM (PORTAL 2)
K 1001	ADMINISTRATION BUILDING
K 1002	CAFETERIA
K 1003	DISPENSARY
K 1003A	DISPENSARY OFFICE TRAILER
K 1004 A Thru K 1004 C	LABORATORY FACILITIES
K 1004 D	LABORATORY FACILITIES
K 1004 H	GAS CYLINDER STORAGE
K 1004 J	LABORATORY COMPLEX
K 1004 L	LABORATORY FACILITY
K 1004 N	COOLING TOWER
K 1004 N1	COOLING TOWER
K 1004 P	ISOSTATIC TEST FACILITY
K 1006	LABORATORY FACILITIES
K 1007	COMPUTER CENTER
K 1008A Thru K 1008D	CHANGE HOUSES
K 1008E Thru K 1008F	CHANGE HOUSES
K 1010	LABORATORY REC & HANDLING
K 1015	LAUNDRY
K 1020	HEALTH, SAFETY & ENVIRONMENTAL AFFAIRS
K 1021	OLD FIRE HEADQUARTERS
K 1023	LABORATORY
K 1024	LABORATORY & MAINT TRAINING
K 1025A Thru K 1025E	RAD SOURCE STORAGE & WHSE SHIP DRUMS
K 1030	MAINTENANCE SHOP & OPERS ANALYSIS OFF
K 1034A	PLANT RECORDS VAULT
K 1035	MAINTENANCE BUILDING
K 1036	MAINTENANCE STORES SHIPP & REC
K 1037	AVLIS FACILITY
K 1039	TELEPHONE BUILDING
K 1040	MAINTENANCE SHOP K 633
K 1045	STORAGE BUILDING
K 1045A	FIRE TRAINING FACILITY
K 1052	AMDL LABORATORY
K 1055	COMPRESSED GAS CYLINDER STORAGE
K 1056	LUMBER WAREHOUSE
K 1058	BUILDING MATERIAL WAREHOUSE
K 1059	BUILDING MATERIAL WAREHOUSE
K 1061	OIL STORAGE BUILDING
K 1064	SALVAGE YARD
K 1066 A Thru 1066 L	CYLINDER STORAGE YARDS
K 1071	TRASH COMPACTOR
K 1095	PAINT SHOP
K 1097	CARPENTER SHOP
K 1098	CEMENT STORAGE
K 1098E	SAND BLAST FACILITY (OLD)
K 1098F	SAND BLAST FACILITY (NEW)
K 1098 G	MAINTENANCE (SHED)
K 1101	AIR PLANT
K 1131	FEED & TAILS
K 1132 & K 1133	HF STORAGE
K 1200	COMPONENT PREPARATION LAB (CPL)
K 1201	COMPRESSOR BUILDING
K 1203	WASTE WATER & SEWAGE TREATMENT PLANT
K 1206D	FIRE WATER TANK 300 000 GALLON
K 1206E	FIRE WATER TANK 100 000 GALLON
K 1208	METEOROLOGICAL TOWER
K 1026F	FIRE WATER TANK 400 000 GALLON
K 1210	COMPONENT TEST FACILITY (CTF)
K 1210A	ADVANCED ENGINEERING TEST FACILITY
K 1211	CTF STORAGE
K 1216	SCALE HOUSE
K 1220	CENTRIFUGE PLANT DEMONST FACILITY
K 1225	S S D OFFICE BUILDING
K 1231	PROCESS
K 1231A	STORAGE
K 1232	CHEMICAL RECOVERY FACILITY
K 1233	COLLECTION FACILITY
K 1234	STORAGE
K 1301	NITROGEN PLANT
K 1302	STORAGE
K 1303	RESEARCH COMPRESSOR BUILDING
K 1320	ENGINEERING OFFICE
K 1328	ENGINEERING OFFICE

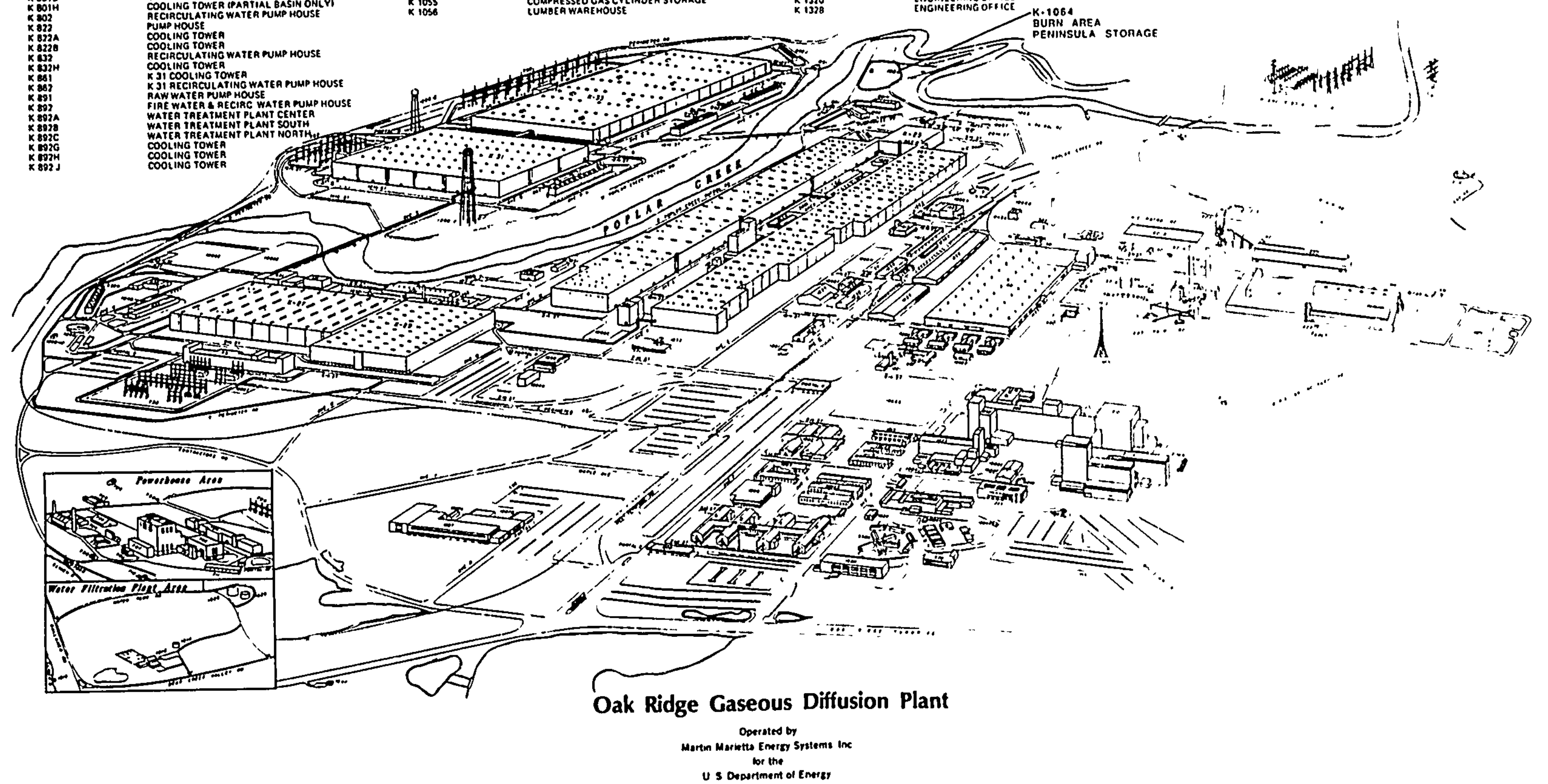

Fig. 3.1. ORGDP location map for the K-1064 burn area/peninsula storage

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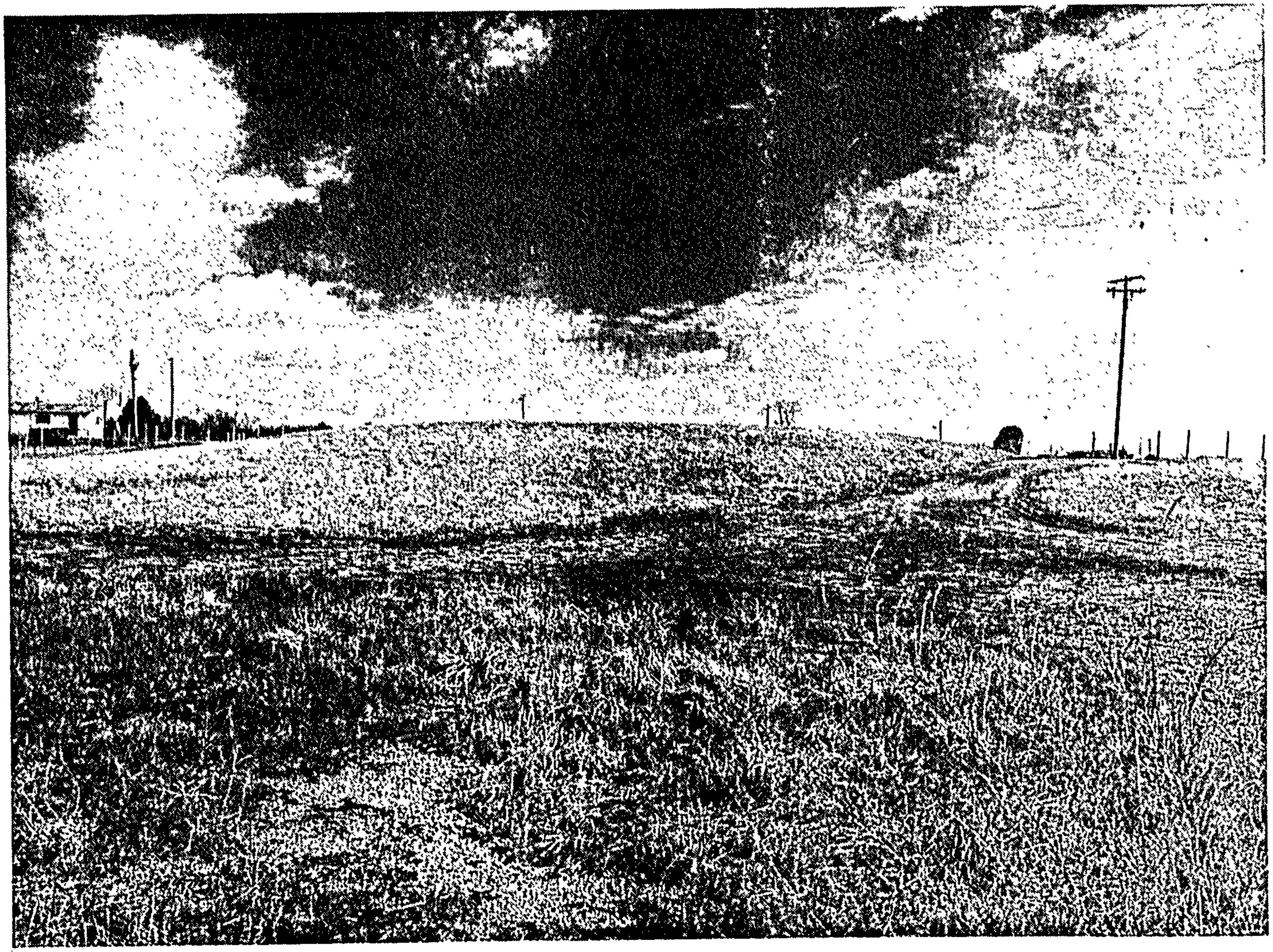


Fig. 3.2. K-1064 Burn Area/Peninsula Storage

4. CHARACTERIZATION OF THE CONTAMINANT SOURCE

Detailed records on the quantities of solvents, organics, and radioactively contaminated waste oil stored or disposed at the site are not available. However, physical and chemical characteristics (i.e., density, vapor pressure, etc.) for contaminants identified at concentrations above the guidelines in Table 2.2 of the General Document will be included in the Remedial Investigation Report.

5. CHARACTERIZATION OF THE ENVIRONMENTAL SETTING

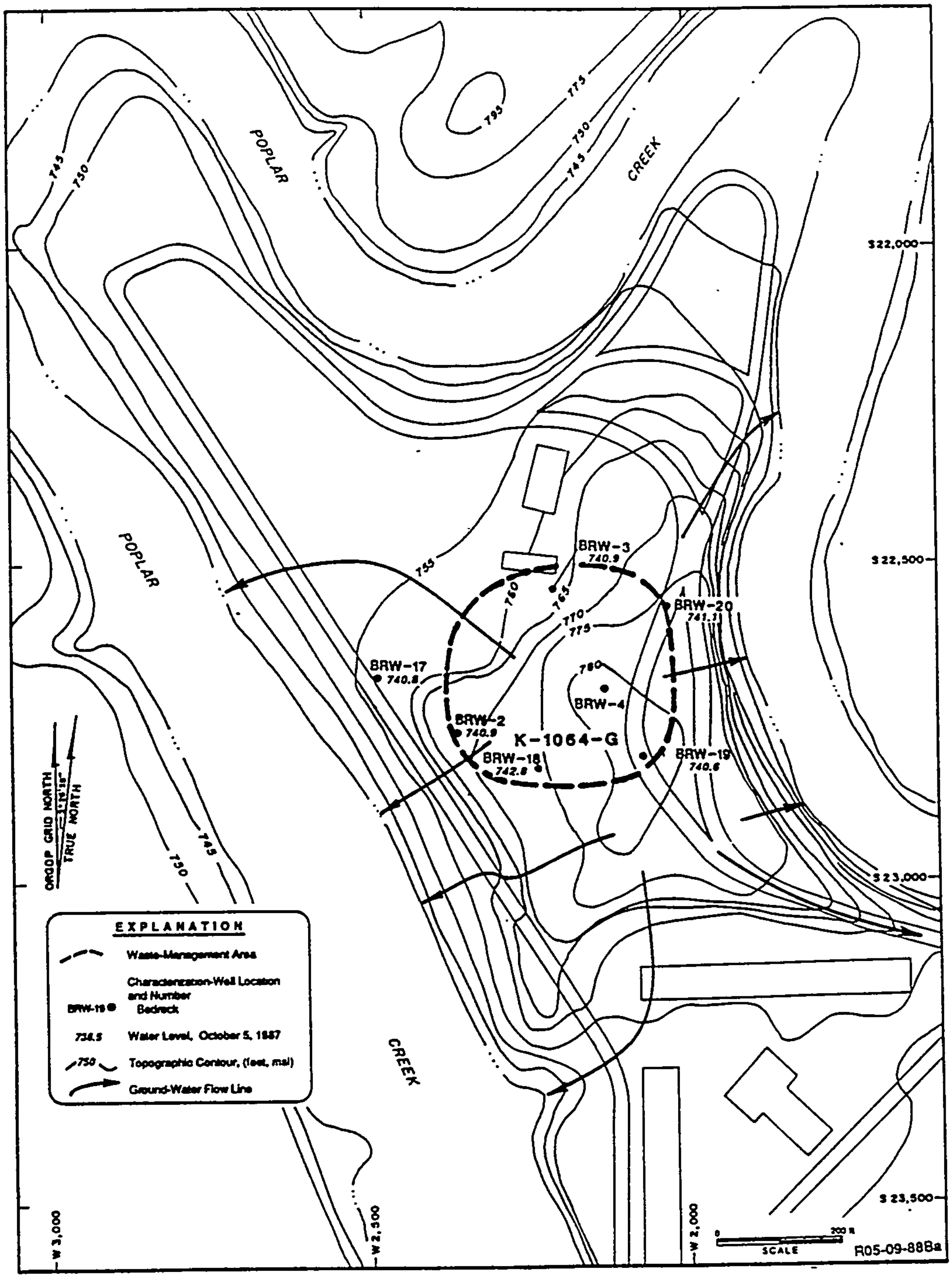
The K-1064 Unit is located on the north side of the ORGDP on a peninsula formed by a northwest trending meander of Poplar Creek. The land surface within the peninsula and the K-1064 area forms a low hill which rises to approximately 40 ft above the full-pool level of the Watts Bar Reservoir in the adjoining Poplar Creek embayment. The topography of the K-1064 area is shown on Figure 5.1.

Seven groundwater monitoring wells have been installed at the K-1064 site; they are bedrock wells and are numbered BRW-2, -3, -4, -17, -18, -19, and -20. The locations of the monitoring wells are shown on Figure 5.1 and their lithologic logs are attached in Appendix B. Construction diagrams of these wells are in Hydrogeology of the Oak Ridge Gaseous Diffusion Plant,[7] Appendix B, Geraghty and Miller, 1988.

The general geology of the ORGDP area is shown in Figure 5.2 and has been compiled from three major sources: (1) Hydrogeology of the Oak Ridge Gaseous Diffusion Plant,[7] Geraghty and Miller, 1988, (2) recent, unpublished work by R. H. Ketelle,[8] Oak Ridge National Laboratory, and (3) "Geologic Map of the Oak Ridge Area, Tennessee,"[9] by W. M. McMaster, U.S. Geological Survey, 1958. The following geologic descriptions and the discussions of hydrogeology are based on both these sources and the well logs (Appendix B), and specific data (e.g., permeabilities, etc.) are referenced as applicable.

5.1 HYDROGEOLOGY

Bedrock in the K-1064 area is Chickamauga limestone which in the ORGDP area consists mainly of gray to blue-gray or green, very fine-grained (micritic) limestone with interbedded calcareous shale and shaley limestone. The limestone may be relatively "pure" or argillaceous (contains clay), and it is mostly medium to thinly bedded. Bedding planes in the limestone units are generally comprised of thin, dark shaley partings. Some of the shaley or more argillaceous limestones may have a "nodular" fabric. Chert occurs at some horizons in the Chickamauga, either



GERAGHTY & MILLER, INC.

Fig. 5.1. K-1064 burn area topography and monitoring well locations

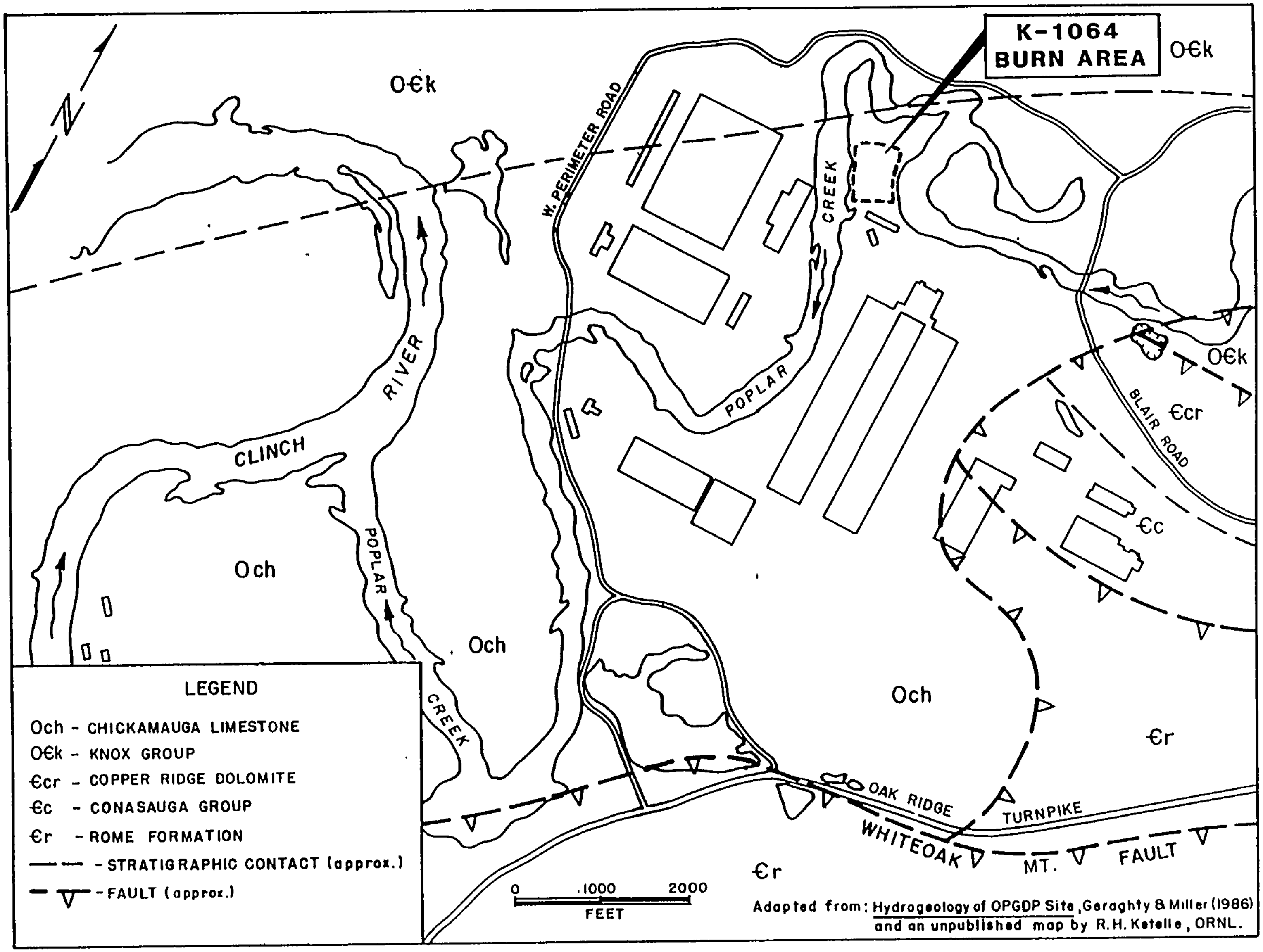


Fig. 5.2. Areal geology of the ORGDP

as zones of nodules or in thin, irregular layers. The calcareous shales are mostly gray to green and contain occasional thin beds of micritic limestone.

The dominant geologic structural feature of the area is the Whiteoak Mountain fault, the trace of which extends across the southeast side of ORGDP approximately one mile from the subject site (Figure 5.2). While the rocks throughout the ORGDP area have been subjected to varying degrees of folding, the strata beneath K-1410 are generally inclined to the southeast. Ketelle (unpublished) has measured the strike and dip of several bedrock exposures along Poplar Creek in the K-1064 vicinity, and while the dip angles range from 25 to 40 degrees, the average dip for this area appears to be about 30 degrees. The strike of the inclined strata here is generally northeast-southwest, approximately parallel to the trace of the fault. Structural deformation has caused extensive fracturing and jointing in the more competent units of bedrock, and this fracturing is evident as "secondary calcite" (fracture filling) noted in the lithologic logs of the wells (Appendix B).

Groundwater storage and movement in the Chickamauga bedrock occur in a system of interconnecting, solution-enlarged channels developed mainly within the carbonate units along fractures, joints, and bedding planes. Fractures in the more insoluble shales are relatively "tight," and water movement within these rocks is very limited; however, the more shaley units may tend to contain groundwater flow within the interbedded carbonates and develop flow paths along bedding planes parallel to strike. The direction of groundwater flow in the bedrock beneath K-1064 is generally southwest, and northeast, along strike, toward Poplar Creek. Two wells, BRW-2 and BRW-3, have been field tested for permeability, which is reported by Geraghty and Miller[7] (1988, p. 4-8) to be 1.54×10^{-3} and 5.27×10^{-3} centimeters per second (cm/s), respectively. These permeability measurements are presumed to be typical for the fractured limestones and dolomites in the ORGDP area. Shales or very shaley limestones will generally exhibit much lower permeabilities.

The unconsolidated zone in the K-1064 area is very thin, the depth being generally less than five ft according to the lithologic logs of the monitoring wells. The unconsolidated zone may consist of either residual clay or construction fill. The residuum is mainly red to brown, plastic clay with scattered rock (limestone) fragments, and the fill is generally clay and/or limestone aggregate.

The unconsolidated zone at this site is not an aquifer and serves only to percolate rainfall downward to the soil-bedrock interface which some of the water will penetrate according to the extent of openings in the bedrock. In the event of contaminant migration, clays in the soil zone may afford some degree of attenuation; however, the soils of this site have not been characterized for such parameters as cation exchange capacity (CEC), organic content, porosity, etc. Such characterization may be necessary in order to determine the role of these soils in contaminant migration and attenuation.

The soil-rock interface, because of the very thin soil cover, may be a zone of extensive water flow during and immediately following major rainfall events. Any such flow would normally occur mainly along strike, northeast-southwest, and it would likely result in wet-weather seeps (ephemeral springs) along the northeast and southwest sides of the area.

The hydraulic gradient in the K-1064 area may be periodically affected by the fluctuating water levels in the Watts Bar Reservoir which extends into Poplar Creek in the ORGDP. Very local reversals of hydraulic gradient may occur in the areas adjacent to Poplar Creek. However, the reservoir fluctuations normally take place very slowly, and the effect on local water table conditions is not expected to be significant or extensive.

5.2 SURFACE WATER

The K-1064 Unit is situated on a low hill in the "neck" of the peninsula (Figure 5.1). Surface water (i.e., rainfall runoff) initially drains radially from the crest of the hill, following the natural slopes. The hill is generally elongate, trending north and south, therefore, runoff eventually trends east and west toward Poplar Creek on either side of the peninsula.

Diversion ditches along area roads on either side of the subject site channel must runoff to drainage culverts which carry the water beneath the roads and to Poplar Creek. Figure 5.3 shows the general surface water flow pattern and the locations of the culverts.

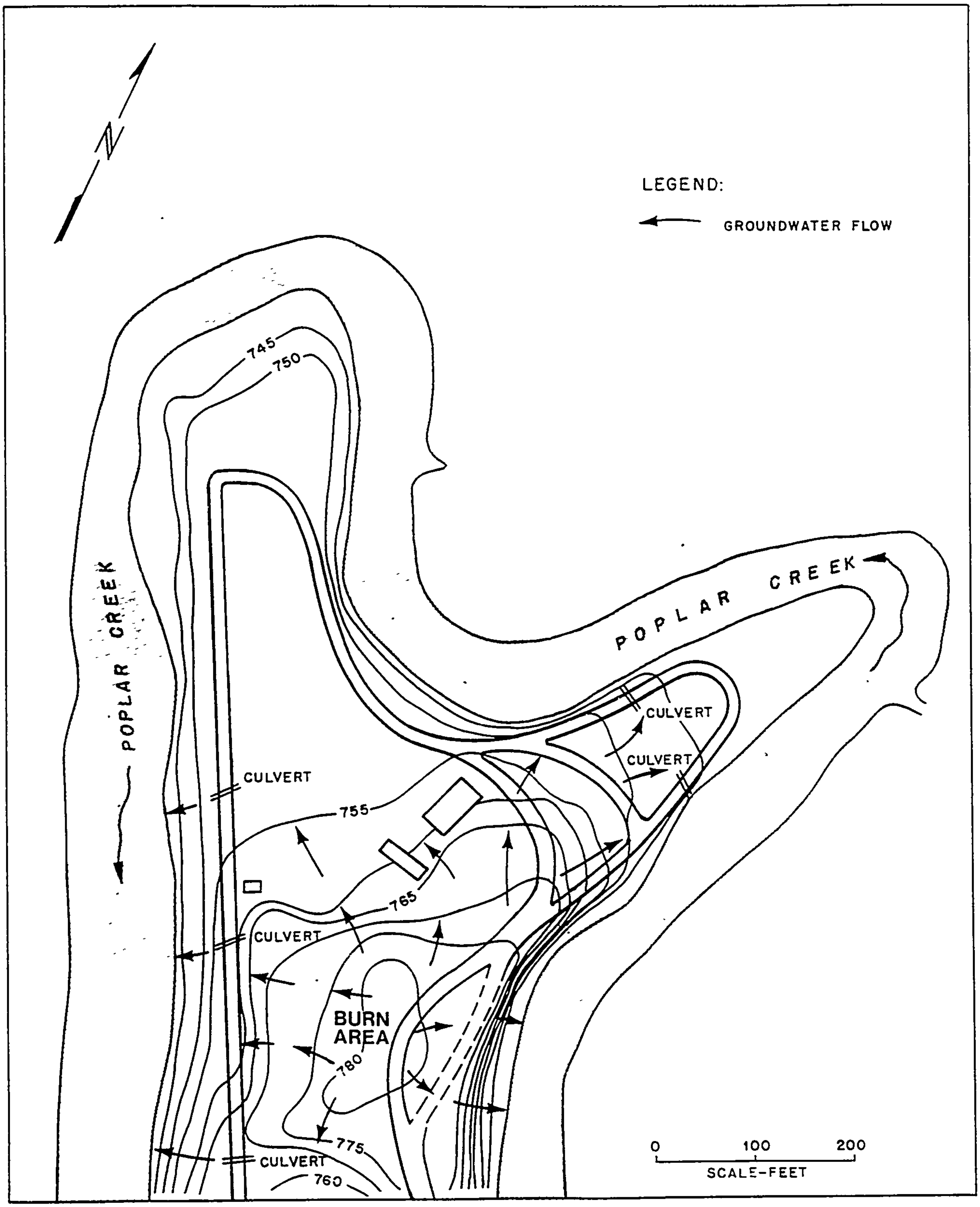


Fig. 5.3. Surface water flow in the K-1064 area

There are no perennial streams, ponds or other natural surface water features (other than Poplar Creek) associated with the K-1064 area. A general discussion of surface water in the ORGDP area is found in Section 4.3 of the General Document

5.3 AIR

No site-specific air quality data are available for this SWMU. Energy Systems has an ongoing study of the meteorological conditions, and general data for ORGDP are available in Section 4.4 of the General Document. Recent air quality data from the ORGDP monitoring system are available in The Environmental Surveillance of the U.S. Department of Energy Oak Ridge Reservation and Surrounding Environs During 1987,[10] Volume 1, ES/ESH-4/V1.

6. IDENTIFICATION OF POTENTIAL PATHWAYS AND RECEPTORS

Assessment of an inactive hazardous waste disposal or storage site is required to evaluate the site's potential for health or safety risks to personnel, public, or environment. Determination of such risks must be based on evaluations of both the potential pathways of contaminant migration and the possible receptors of the contamination. Evaluations of the pathways which might release contaminants from the K-1064 area and possible receptors of the contamination are based on (1) interviews with persons having knowledge of the items stored or disposed of at the site, (2) the results of monitoring programs, and (3) drum removal and disposal records.

Since use of the site was discontinued in 1979, only residual contamination is of concern in ascertaining pathway contamination. The possibility of storage drum leakage and the presence of burn and other disposal residue indicate the potential for soil, groundwater, and surface water contamination. Since any volatiles would have dispersed to the atmosphere quickly, atmospheric transport is not considered as a current pathway of migration. Similarly, the shallow root system of the grass and scrub vegetation at the site eliminates it as a pathway of exposure. While the aquatic life in Poplar Creek presents a possibility of release via fishing along the Clinch River, that pathway will be covered in an off-site RFI for the Clinch River and Poplar Creek watersheds. Section 5 of the General Document will serve as a general reference concerning the potential pathways and receptors for the ORGDP.

6.1 POTENTIAL PATHWAYS OF MIGRATION

6.1.1. Soil

The storage and burn area is covered by a thin-layer (less than 5 ft) of clay residuum with a typically low hydraulic conductivity and a relatively high capacity for the immobilization or exchange of metals and the filtering of particulates. These physical and chemical properties of the soil make it likely that there are PCBs, other organics, regulated metals, and radioactive contamination present.

Preliminary sampling confirms the presence of these contaminants primarily in the area east of the road and west of Poplar Creek (Figure 7.1). The adsorptive qualities associated with clay, however, would tend to inhibit migration. The failure of samples to detect similar levels of these contaminants west of the road supports this theory. Additional sampling will be carried out to determine the extent of migration.

6.1.2 Groundwater

The loose mantle of clay residuum at the K-1064 site is underlain by thin beds of limestone which follow the regional southwest-northeast strike. The thin-bedded limestone's intercalation with shale permits relatively rapid groundwater movement away from the burn/storage site. Since the site is bounded by Poplar Creek on three sides, local groundwater recharge from precipitation moves along short northeast and southwest flow paths into the creek (Figure 5.1). The shale beds restrict flow across the bedding, contributing to concentrated flow along the limestone-shale contact with resultant solution cavities. The cavities form conduits for accelerated groundwater flow to Poplar Creek. While residual contamination is likely to be very dilute, monitoring of the groundwater pathway is still warranted.

6.1.3 Surface Water

Surface water drains from K-1064 to Poplar Creek, the single largest tributary of the Clinch River with the largest drainage basin of any ORR stream. Thus, its water quality is affected by a variety of sources, many of which lie upstream of the K-1064 site. Several storm drains, which collect surface runoff from K-1064 area, discharge to Poplar Creek (Figure 5.2). Because of the confounding data which could be influenced by the influx of these and other upstream drains, an effort will not be made to monitor the water quality of Poplar Creek near the K-1064 area as a part of this RFI plan. Poplar Creek will be evaluated by the planned off-site RFI for the Clinch River and Poplar Creek watersheds. However, due to the potential for surface contamination from previous drum storage and solvent burning, surface water sampling will be conducted to determine if there is surface water contamination migrating from the K-1064 area.

6.1.4 Air

Despite the fact that volatile organics were burned and stored at the site, only trace concentrations of volatile organics currently exist in the soil (Section 7). The site was closed in 1979; therefore, any significant levels of volatile organics present in the soil have since dissipated into the atmosphere. PCBs and polycyclic-aromatic hydrocarbons (PAHs) found in the soil have low vapor pressures and, as such, have a low potential for volatilization. Since the area is covered with grass, it is also unlikely that there are significant levels of contaminated airborne particulates at the site. The potential for air contamination from this site is unlikely and will not be further investigated.

6.1.5 Vegetation

In order to minimize the potential for contaminant migration via contaminated surface water runoff or volatilization of organic compounds, or resuspension of contaminated airborne particulates, the K-1064 Unit was covered with soil and seeded during closure. The plants and grasses that cover the K-1064 area have a shallow root system and, therefore, biological uptake of contamination via plant roots is not expected to occur in this area. In addition, the soil placed over the site eliminates the possibility of resuspension of contaminated particulates and the volatilization of volatile organic compounds, so, biological uptake via transpiration is also not expected to occur in this area. Thus, vegetation is not considered a pathway of contaminant migration at the K-1064 Unit.

6.1.6 Subsurface Gas

The decomposition of buried organic waste can result in the generation of subsurface gas. However, field monitoring and sampling during well installation indicate that no subsurface gases are being emitted in the area. Therefore, subsurface gas is not considered a potential migration pathway.

6.2 POTENTIAL RECEPTORS

6.2.1 Human Populations

The institutional controls which regulate access to the ORGDP limit the public populations of interest as potential receptors to those persons near the reservation boundary and/or downgradient from the site. These populations may risk exposure through possible groundwater or surface water contamination. Of the known 25 groundwater wells within one mile of the ORGDP, none are located within the same hydrogeological environment as the K-1064 peninsula, as discussed in Section 5.2 of the General Document. Further, their distance from the site and the localized groundwater recharge would make fouling due to any contamination from the K-1064 Unit unlikely.

Ten public water supplies were withdrawn from the Clinch-Tennessee River system downstream of the K-1064 Unit. As documented in the General Document (Table 5.1), none of these are nearer than eight river miles to the ORR. The Clinch-Tennessee system is also used for industrial withdrawals and general recreation use.

6.2.2 Flora and Fauna

Section 5.3 of the General Document discusses the plant and animal species thought to inhabit the area. To date, there has been no report that any of these species are directly threatened by any possible residual contamination present there. The risk of contamination released from the site to local fauna and flora will be assessed in the RFI report.

7. EXISTING MONITORING DATA

7.1 SOIL SAMPLING

Extensive soil sampling of the K-1064 Unit was conducted in October 1986 to characterize the contamination present there. Fifteen core samples were taken from the area. The depth of the core samples varied, but all were to refusal. Each segment (2-ft section) of the core samples were then analyzed for PCBs, volatile organics (VOA), and base, neutral, and acidic organics (BNA). Additionally, a composite of all segments from a single core sample were analyzed for metals and radioactivity (gross alpha, beta, and gamma). The raw data have been compiled in Sampling and Analysis Plan for the K-1064 Burn Area/Peninsula Storage,[11] K/PS-1289. A map showing where samples were taken is included as Figure 7.1. The following sections summarize the results of the above sampling program.

7.1.1 Metals Results

In an attempt to keep the cost of sampling to a minimum for this area, it was decided to initially analyze the soil samples for a total concentration value for individual metals (Cr, Zn, Ni, Hg, etc.). An EP-TOX extraction was then conducted on only those samples whose individual total metal content was high enough that if leached, the resultant leachate (assuming 100% extractability) would exceed the EP-TOX limits for that constituent.

Figure 7.2 provides a three-dimensional perspective of the sampling locations. Figure 7.3 displays the depths of each borehole identification numbers. A three dimensional representation of the metals data is contained in Figures 7.4 through 7.13. Close examination of the data indicates that only three sampling sites had any metal concentrations which exceeded the limits listed in Table 2.2 of the General Document. The sampling sites are labeled 7, 8, and 9 on Figure 7.1. The metals which were found to exceed the limits indicated in Table 2.2 of the General Document are cadmium, chromium, and lead. In addition to these regulated metals, nickel and uranium were also found in concentrations above that were found in the background sample (point No. 16). Best

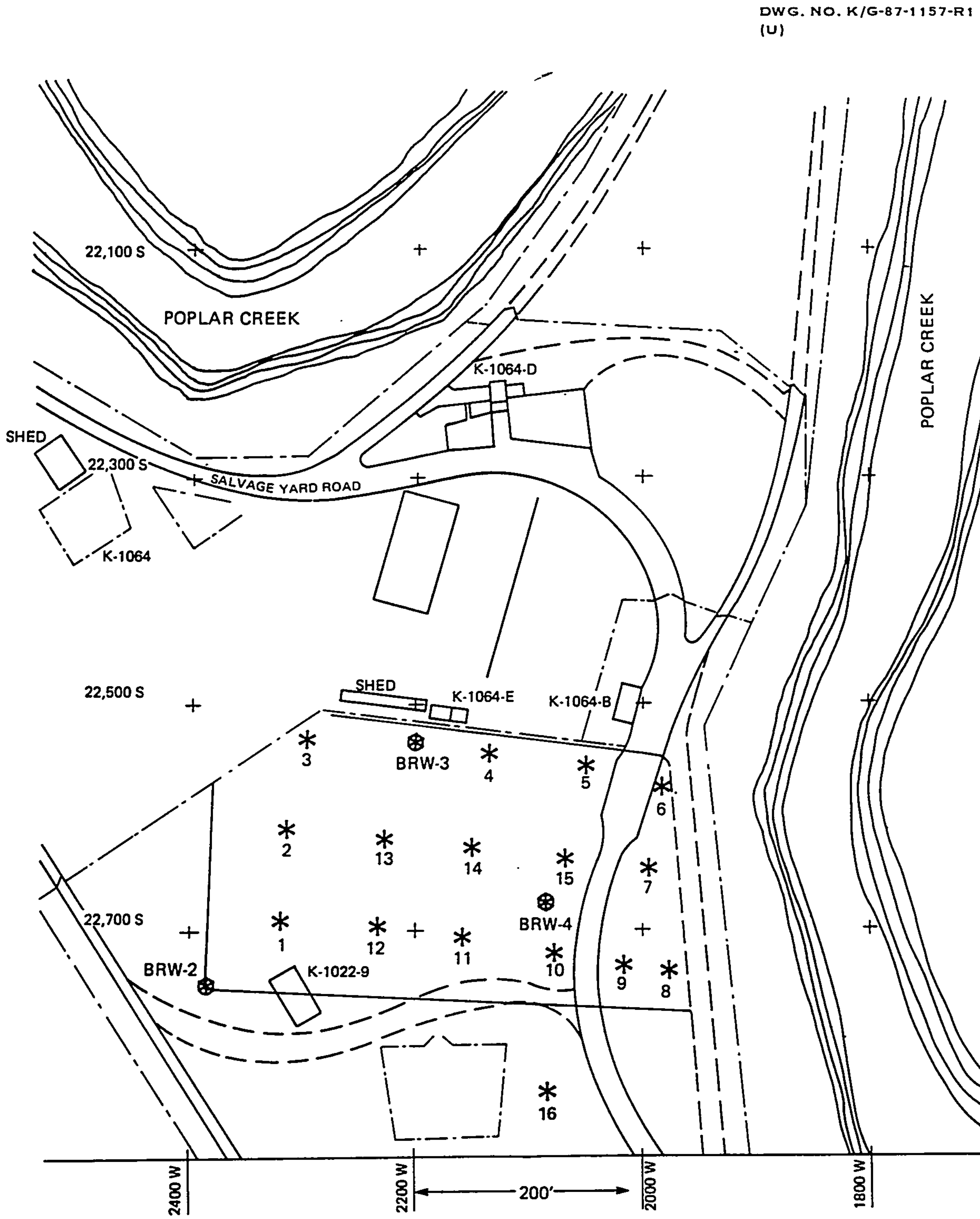
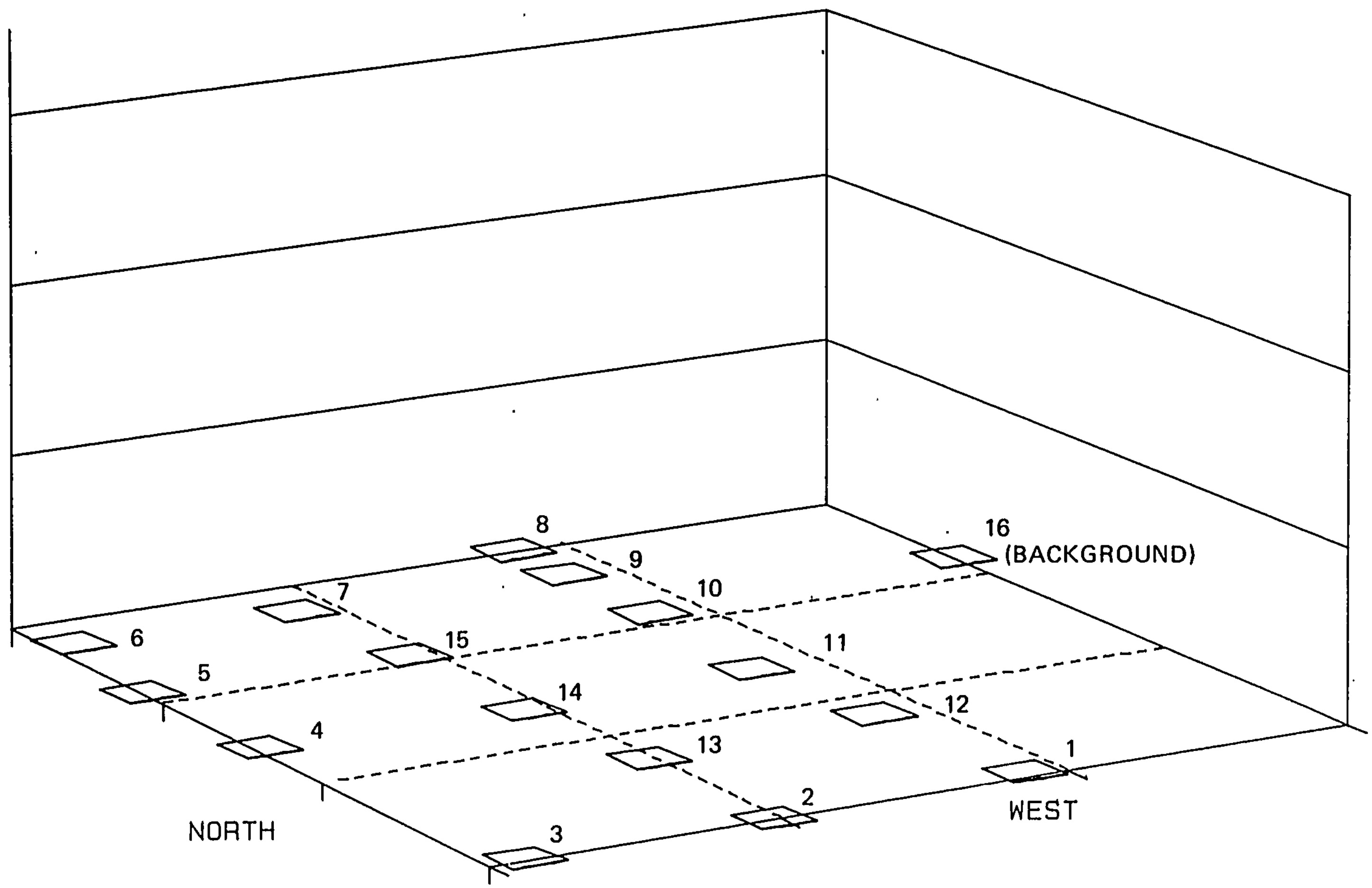


Fig. 7.1. Location of Soil Samples Taken During October 1986 in the K-1064 Burn Area/Peninsula Storage



SHOWN ARE SAMPLE LOCATION ID NUMBERS

Fig. 7.2. Relative Sample Locations at K-1064 Site

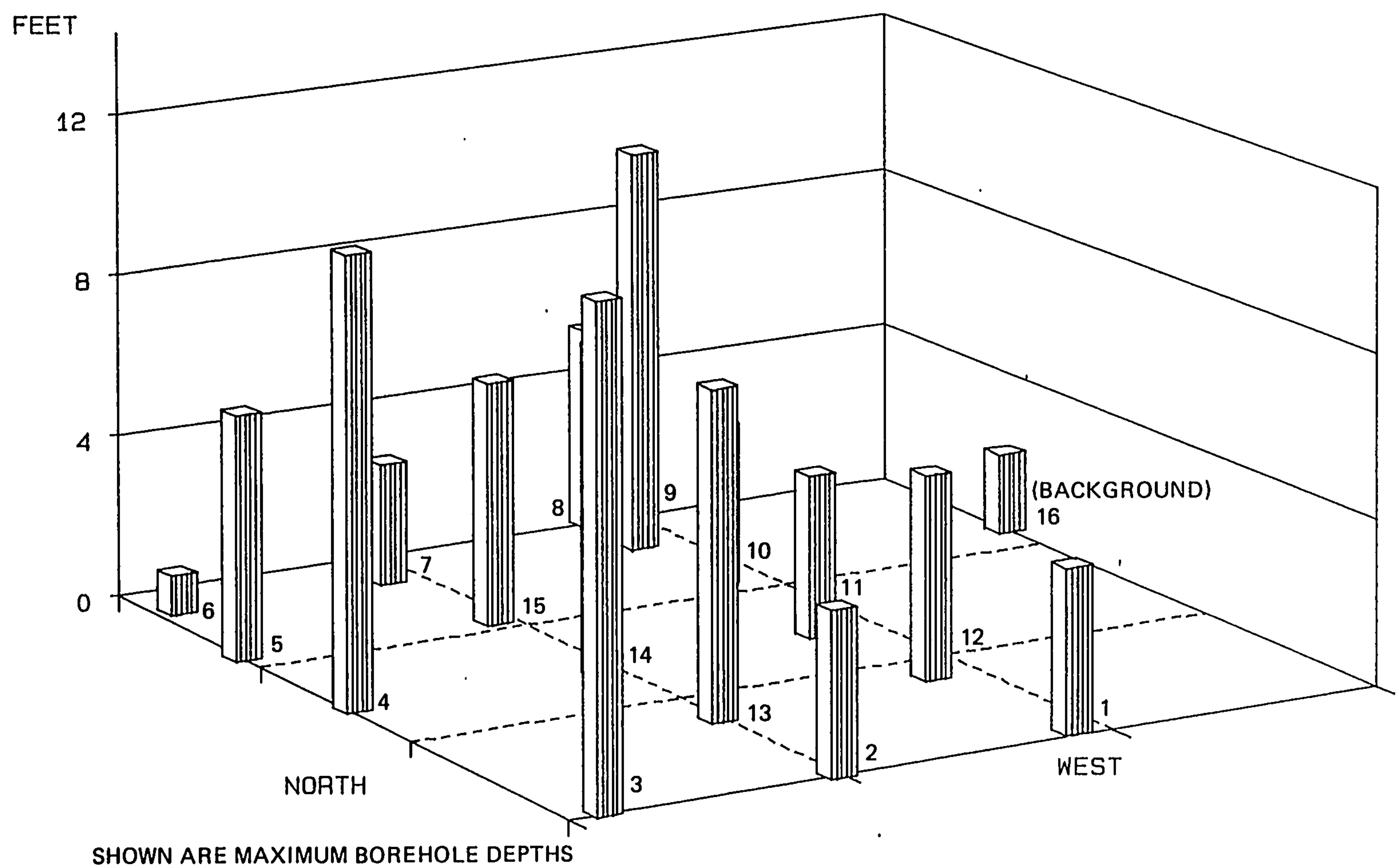
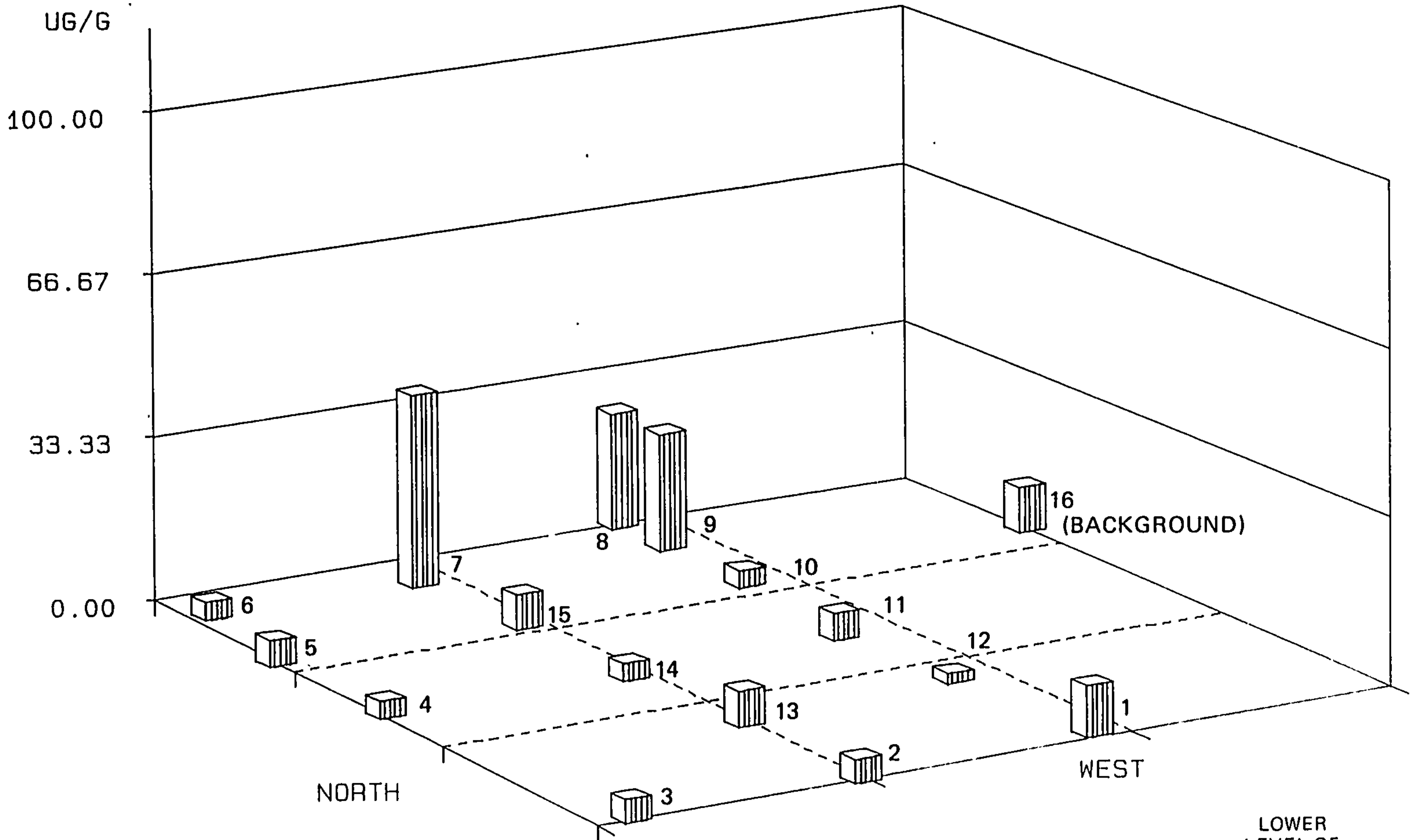
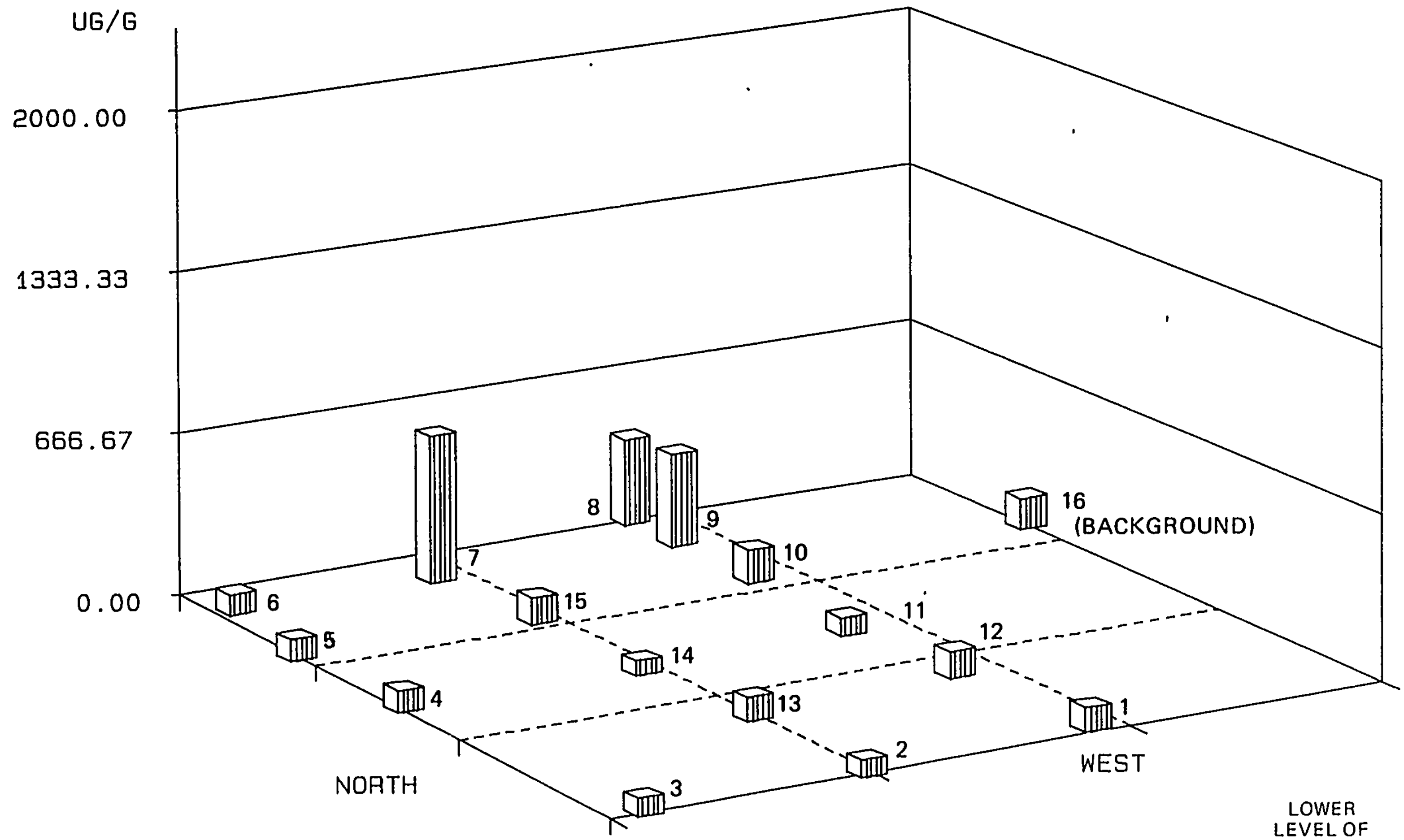


Fig. 7.3. Borehole Depths at K-1064 Site



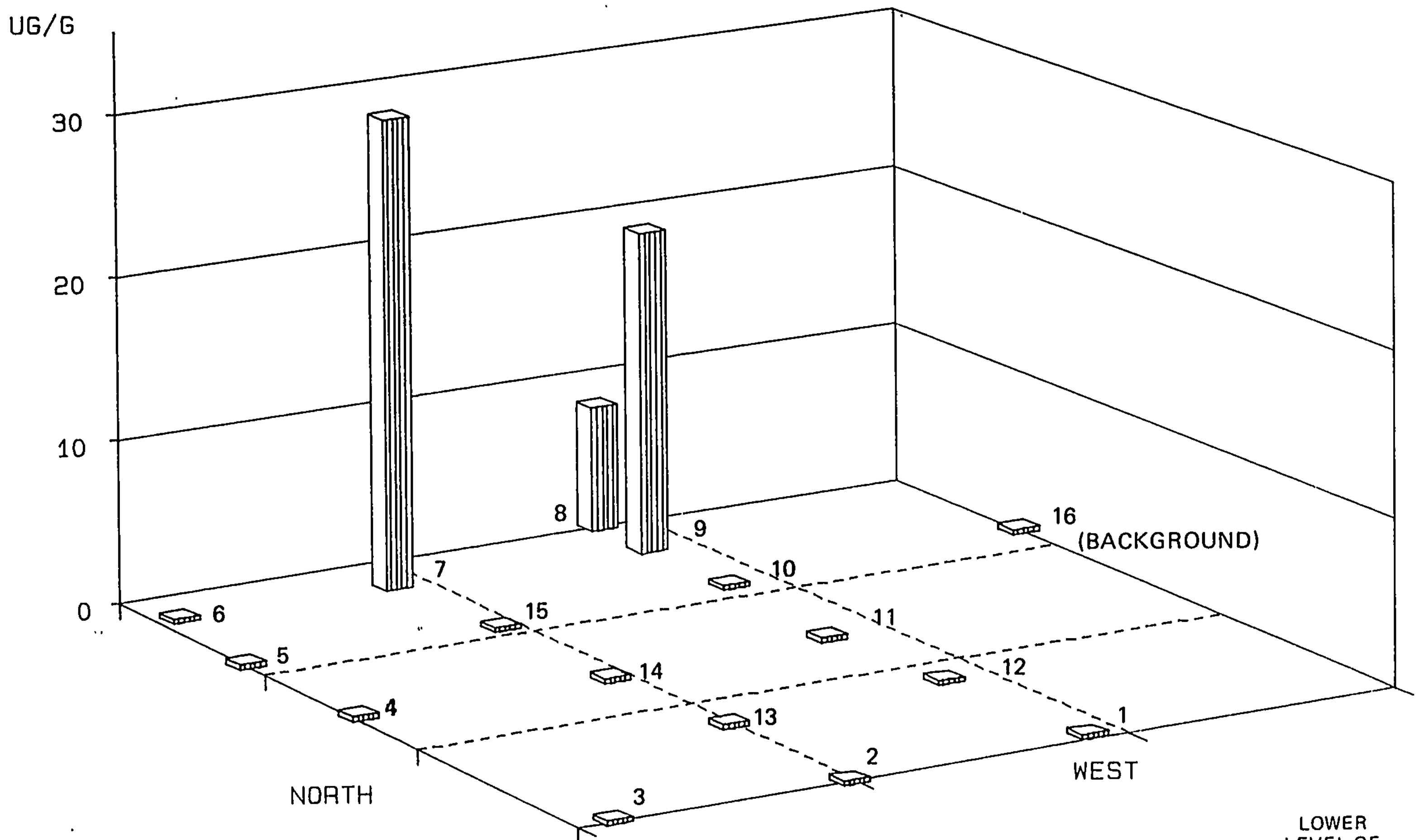
COMPONENT	MINIMUM CONC. ug/G	MAXIMUM CONC. ug/G	AVERAGE CONC. ug/G	LOWER LEVEL OF DETECTION (LLD) ug/g	NUMBER ABOVE LLD
ARSENIC	2.1	40	10	0.5	16

Fig. 7.4. Arsenic Concentration in Composite Samples at K-1064 Site



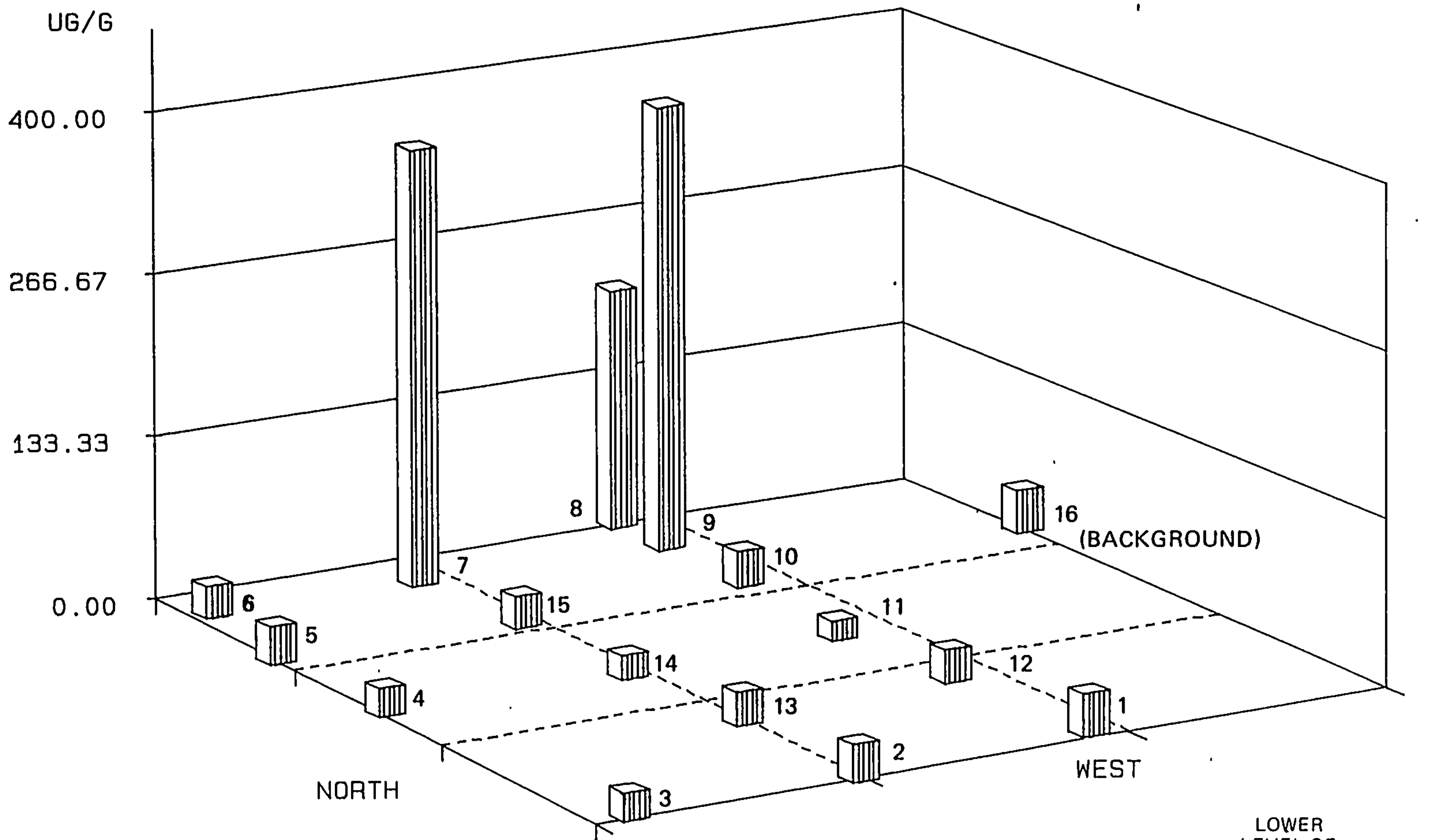
COMPONENT	MINIMUM CONC. ug/G	MAXIMUM CONC. ug/G	AVERAGE CONC. ug/G	LOWER LEVEL OF DETECTION (LLD) ug/g	NUMBER ABOVE LLD
BARIUM	62	610	160	0.1	16

Fig. 7.5. Barium Concentration in Composite Samples at K-1064 Site



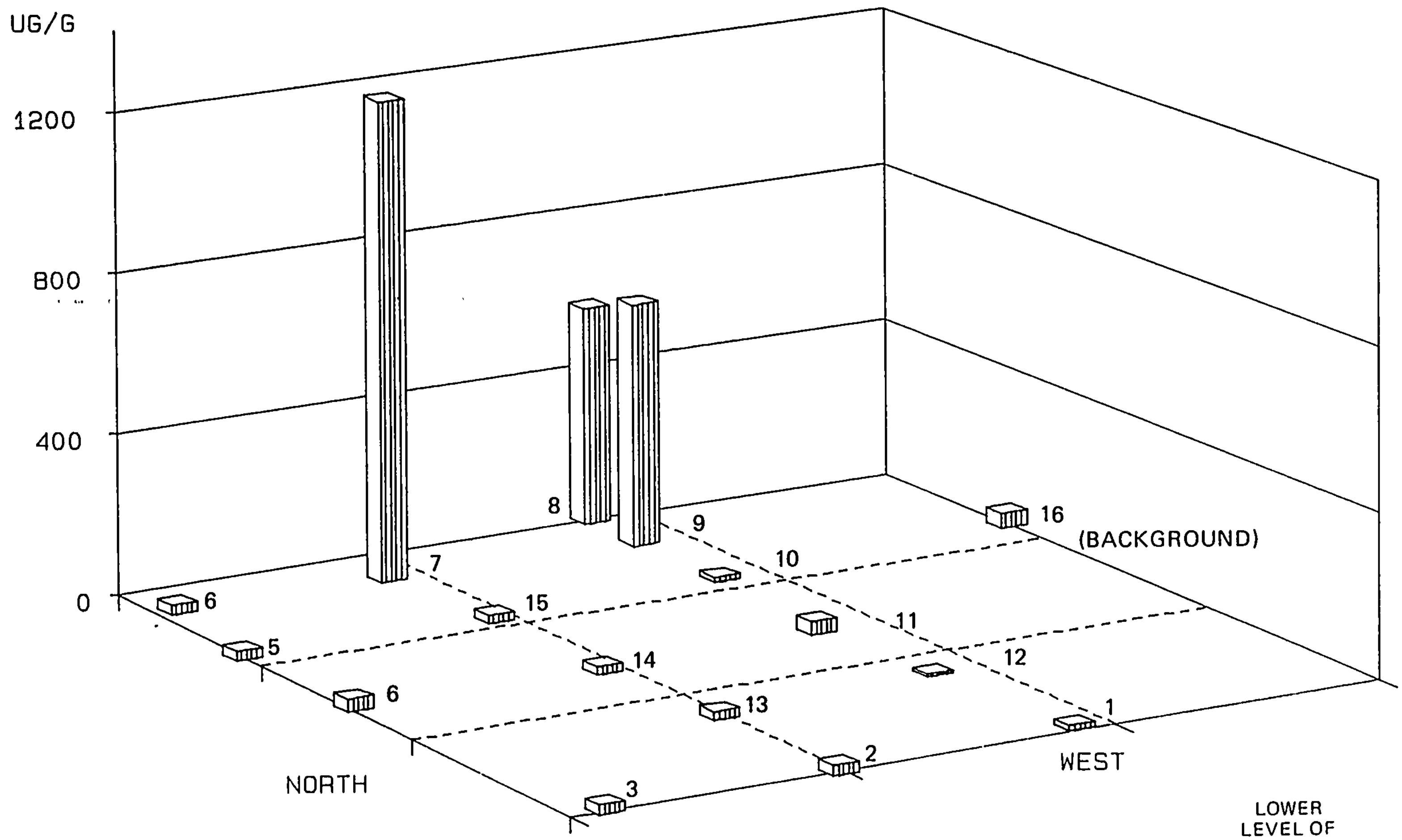
COMPONENT	MINIMUM CONC. ug/G	MAXIMUM CONC. ug/G	AVERAGE CONC. ug/G	LOWER LEVEL OF DETECTION (LLD) ug/g	NUMBER ABOVE LLD
CADMIUM	.30	29	3.8	0.3	3

Fig. 7.6. Cadmium Concentration in Composte Samples at K-1064 Site



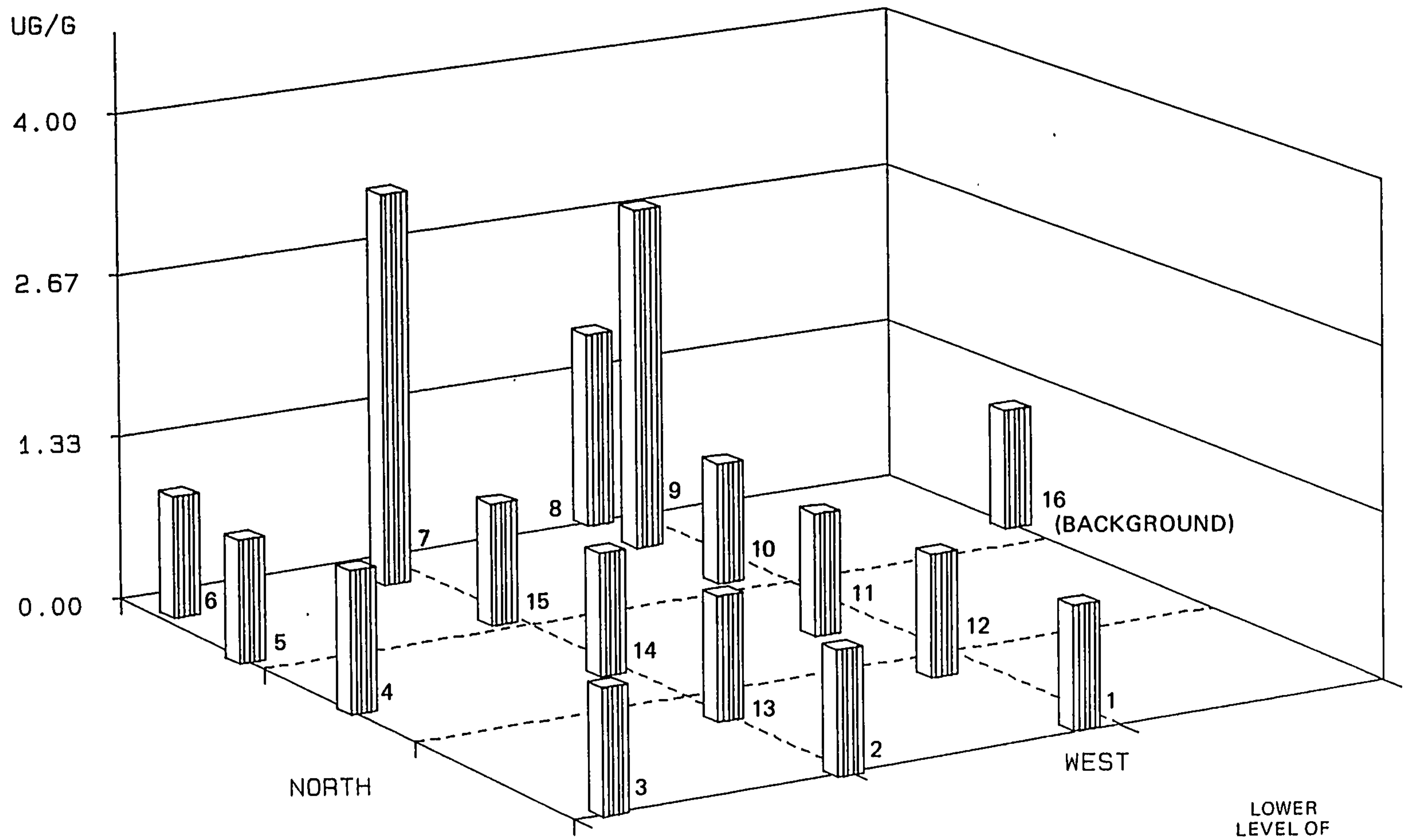
COMPONENT	MINIMUM CONC. ug/G	MAXIMUM CONC. ug/G	AVERAGE CONC. ug/G	LOWER LEVEL OF DETECTION (LLD) ug/g	NUMBER ABOVE LLD
CHROMIUM	16	370	80	1.0	16

Fig. 7.7. Chromium Concentration in Composite Samples at K-1064 Site



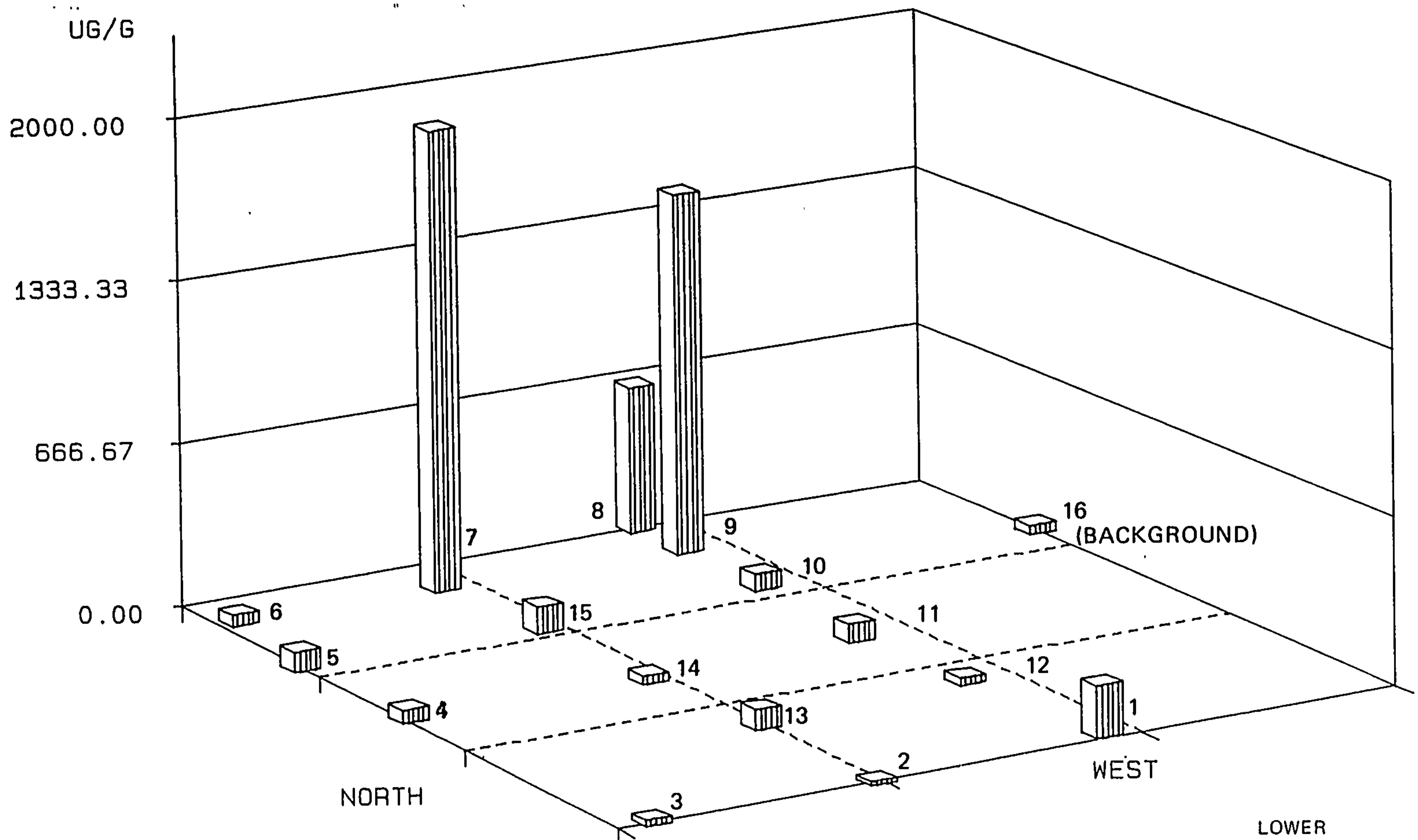
COMPONENT	MINIMUM CONC. ug/G	MAXIMUM CONC. ug/G	AVERAGE CONC. ug/G	LOWER LEVEL OF DETECTION (LLD) ug/g	NUMBER ABOVE LLD
LEAD	8.2	1200	170	5.0	16

Fig. 7.8. Lead Concentration in Composite Samples at K-1064 Site



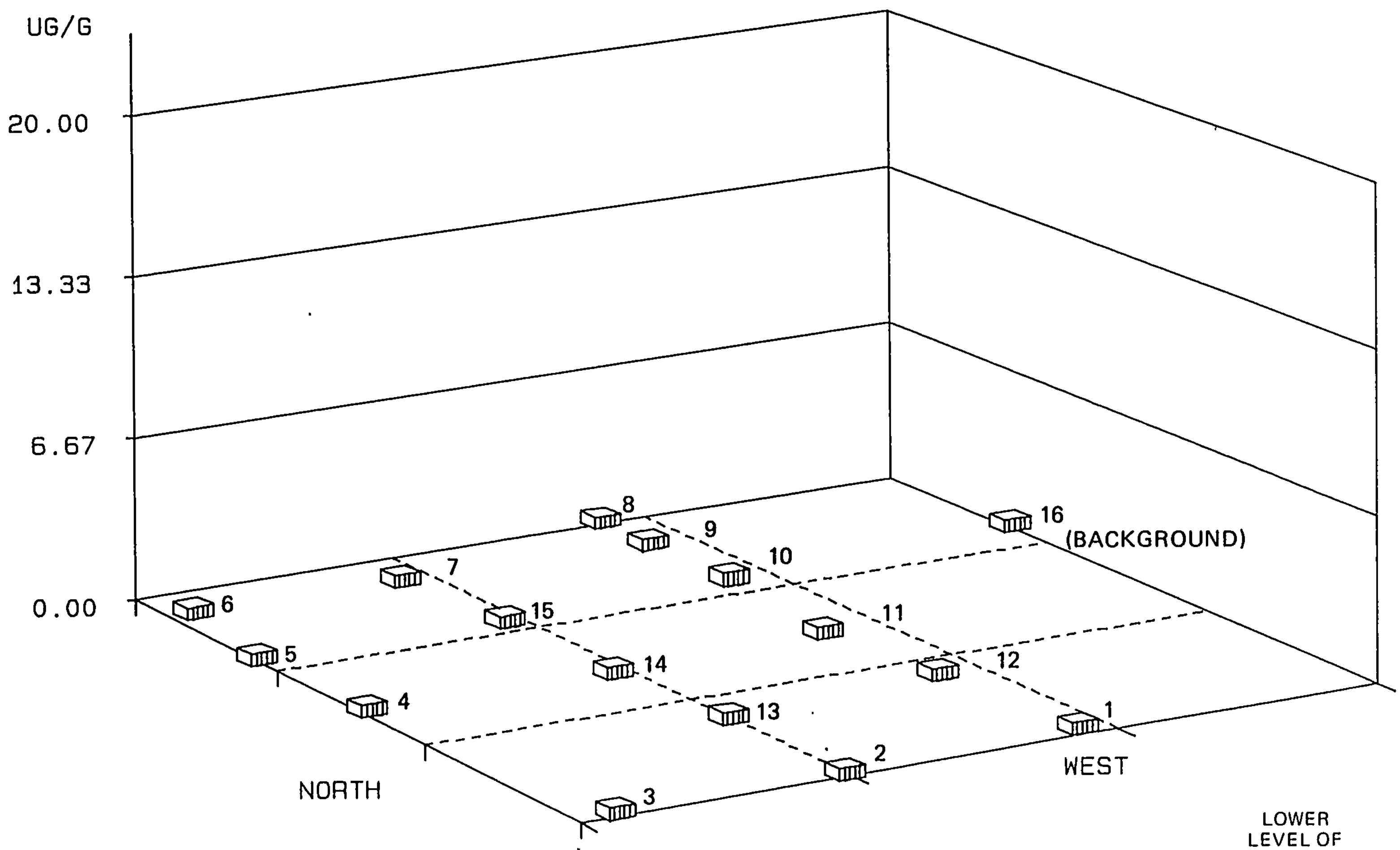
COMPONENT	MINIMUM CONC. ug/G	MAXIMUM CONC. ug/G	AVERAGE CONC. ug/G	LOWER LEVEL OF DETECTION (LLD) ug/g	NUMBER ABOVE LLD
MERCURY	1.0	3.2	1.3	1.0	4

Fig. 7.9. Mercury Concentration in Composite Samples at K-1064 Site



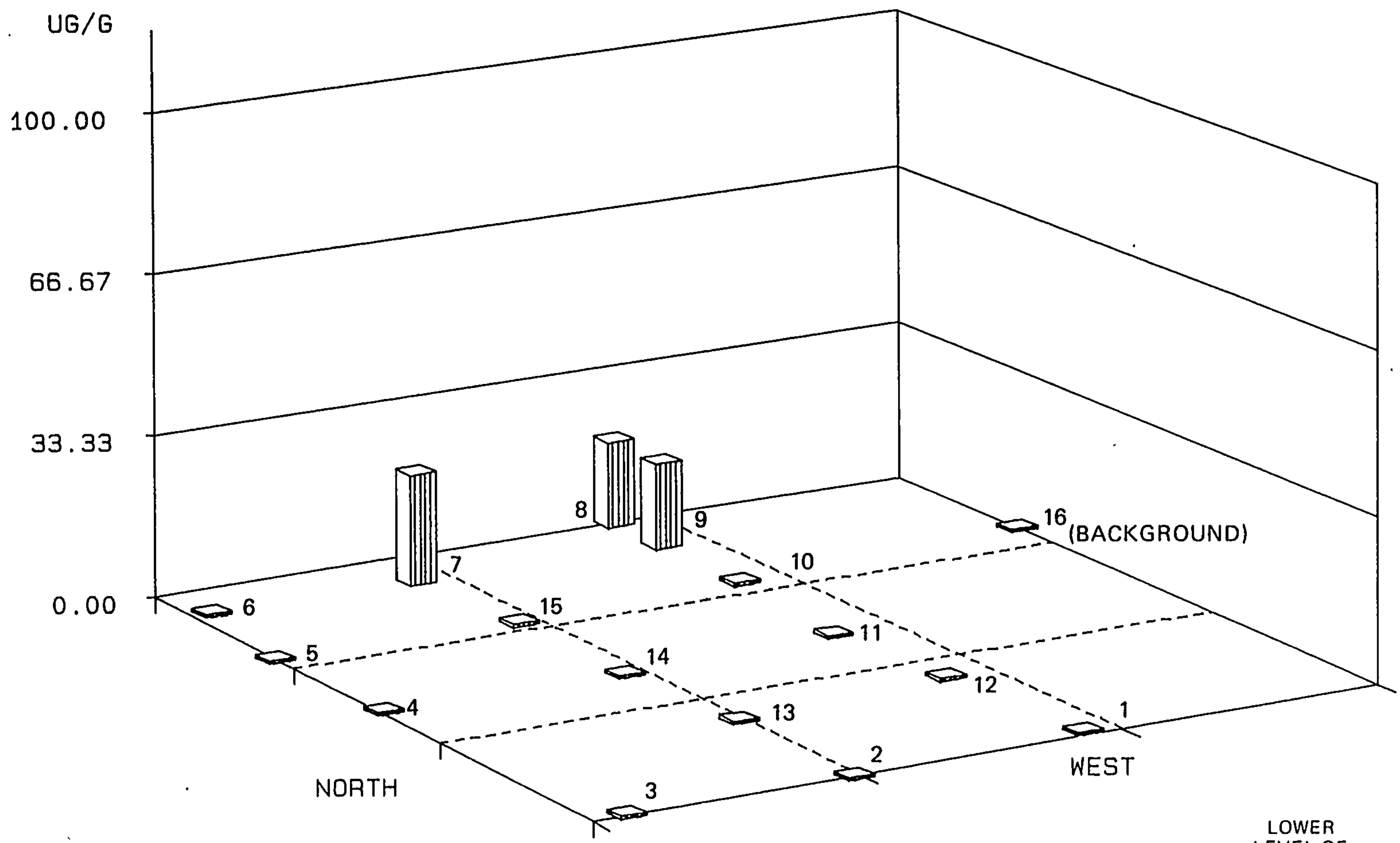
COMPONENT	MINIMUM CONC. ug/G	MAXIMUM CONC. ug/G	AVERAGE CONC. ug/G	LOWER LEVEL OF DETECTION (LLD) ug/g	NUMBER ABOVE LLD
NICKEL	17	1900	310	1.0	16

Fig. 7.10. Nickel Concentration in Composite Samples at K-1064 Site



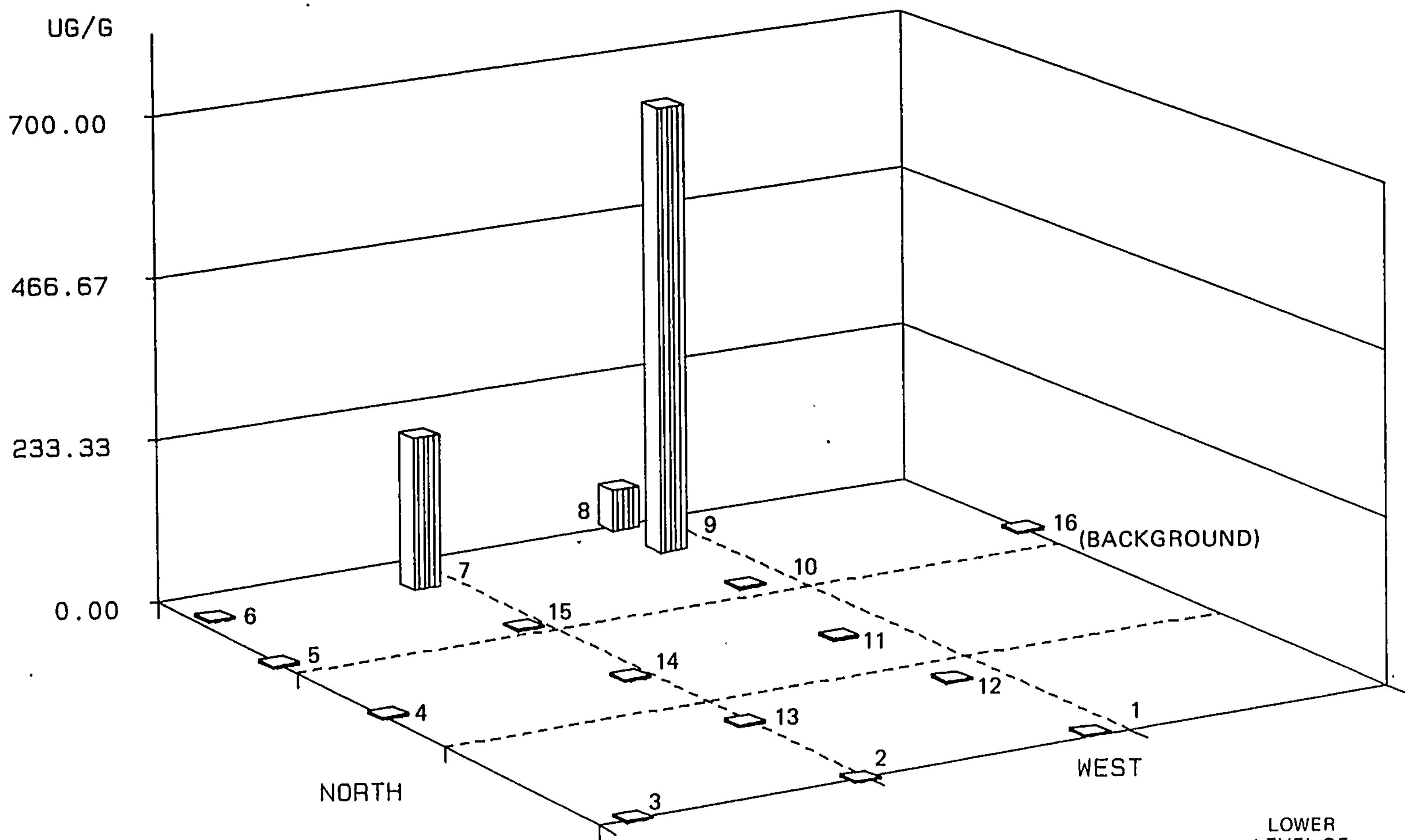
COMPONENT	MINIMUM CONC. ug/G	MAXIMUM CONC. ug/G	AVERAGE CONC. ug/G	LOWER LEVEL OF DETECTION (LLD) ug/g	NUMBER ABOVE LLD
SELENIUM	0.5	0.6	0.5	0.5	1

Fig. 7.11. Selenium Concentration in Composite Samples at K-1064 Site



COMPONENT	MINIMUM CONC. ug/G	MAXIMUM CONC. ug/G	AVERAGE CONC. ug/G	LOWER LEVEL OF DETECTION (LLD) ug/g	NUMBER ABOVE LLD
SILVER	0.6	23	4.1	0.6	3

Fig. 7.12. Silver Concentration in Composite Samples at K-1064 Site



COMPONENT	MINIMUM CONC. ug/G	MAXIMUM CONC. ug/G	AVERAGE CONC. ug/G	LOWER LEVEL OF DETECTION (LLD) ug/g	NUMBER ABOVE LLD
URANIUM	3.0	650	61	3.0	3

Fig. 7.13. Uranium Concentration in Composite Samples at K-1064 Site

technical judgement would require that any additional work performed at this site include both uranium and nickel as well as the EP-TOX metals as species of interest.

7.1.2 Volatile Organics Results

In an attempt to completely characterize the K-1064 Unit, each segment of a core sample was sampled for volatile organics. In the General Document, Table 8.1 lists the VOAs found, their concentration, and location. None of the volatiles listed in Table 7.1 exceeded the hazardous substances guidelines in Table 2.2 of the General Document. For this reason, a volatile organics problem is not present at this site. Additional characterization of volatile organics is unnecessary.

7.1.3 Basic, Neutral, and Acidic Organics (BNA) Results

BNA data were also collected for each segment of a core sample. The analyzed organics are contained in Section 7.6 of the General Document. The only organics found in this area which exceeded the EPA Contract Lab Reporting Limits (also shown in Section 7.6 of the General Document) are the PAHs. Figure 7.14 shows the PAH distribution within the K-1064 area. The highest concentrations of PAHs are located at Sampling Locations 7, 8, and 9.

7.1.4 PCB Results

As with the volatile and base, neutral, and acidic (BNA) organics, each segment of a core sample was analyzed for the presence of PCBs (Figure 7.15). The highest concentration of PCBs was found at sampling Sites 7, 8, and 9. Samples from other sites contained measurable concentrations of PCB, but they were significantly below those measured at Sites 7, 8, and 9. Since a single segment of core sample 9 was found to have a PCB content significantly greater than the limit proposed in the General Document in Table 2.2, it is perceived as a possible problem and as such should be measured during any further investigations carried out at the K-1064 site.

7.1.5 Gross Alpha, Beta, and Gamma Results

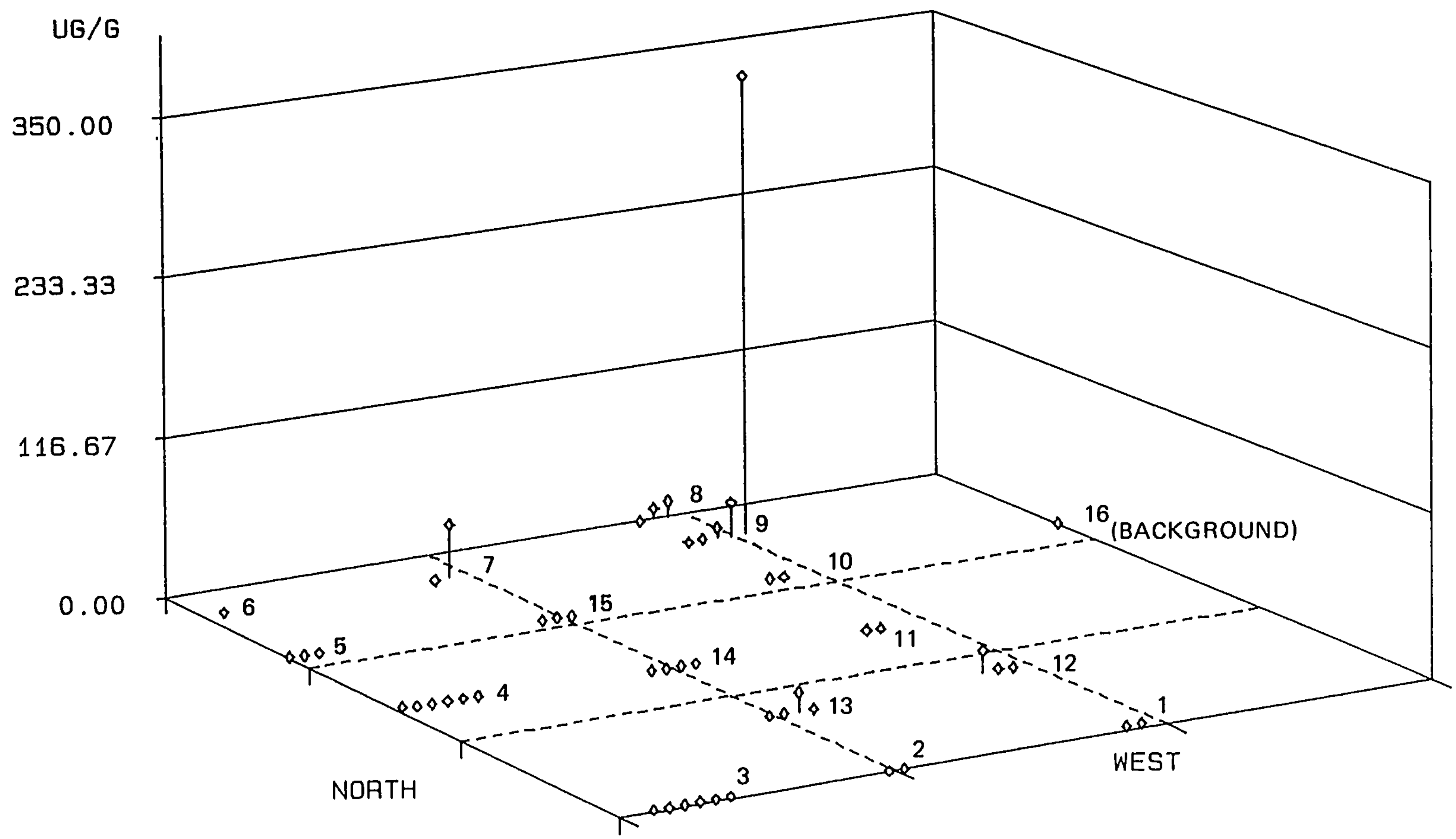
Measurement of the total radioactivity was performed on each composite core sample. The distribution of radioactivity within the K-1064 site is shown in Figures 7.16 through 7.18. The total

Table 7.1. Volatile organics at K-1064 Burn Area/Peninsula Storage Unit

BORE-HOLE	DEPTH (ft)	ANALYSIS	RESULT (ug/kg)
BH-10	0/2	Freon 113	8
BH-10	0/2	Substituted Benzene	110
BH-9	8/10	1,1,2,2-tetrachloroethane	30
BH-9	8/10	Freon 113	8
BH-9	8/10	Methacrylonitrile	110
BH-9	8/10	Unknown	12
BH-9	8/10	Bromodichloromethane	28
BH-9	8/10	Bromoform	34
BH-9	8/10	Chlorobenzene	35
BH-9	8/10	Ethylbenzene	52
BH-9	8/10	Trichloroethene	40

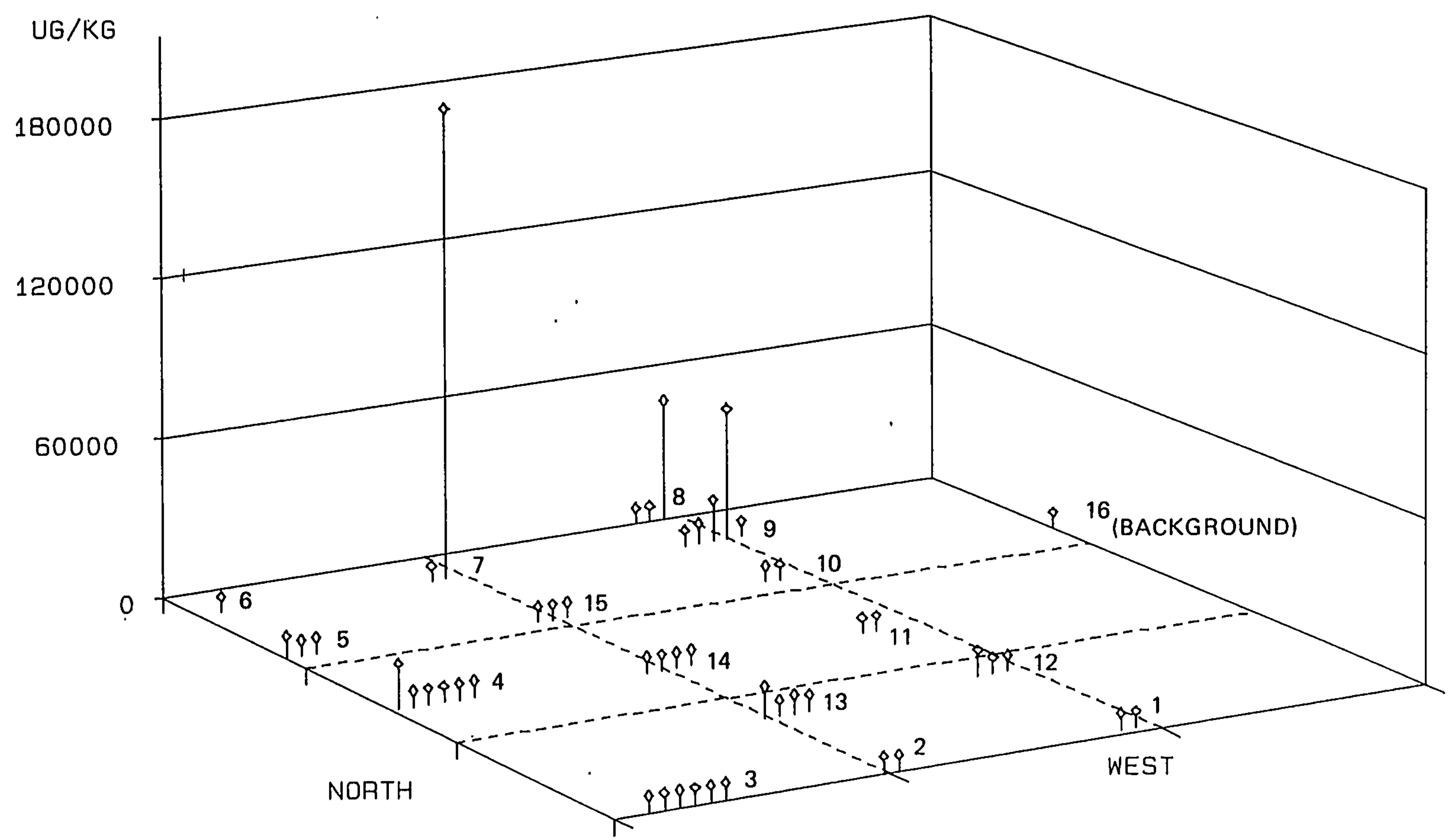
These compounds are those which were definitely detected in samples from this site.

Compounds omitted in this report are those reported as not detected, those with estimated values, and those detected also in the blanks.



2 FOOT DEPTHS: SURFACE = MOST NORTHERLY DEEPEST = MOST SOUTHERLY

Fig. 7.14. PAH Concentration in Depth Profile Samples



2 FOOT DEPTHS: SURFACE = MOST NORTHERLY DEEPEST = MOST SOUTHERLY

Fig. 7.15. PCB Concentration in Depth Profile Samples

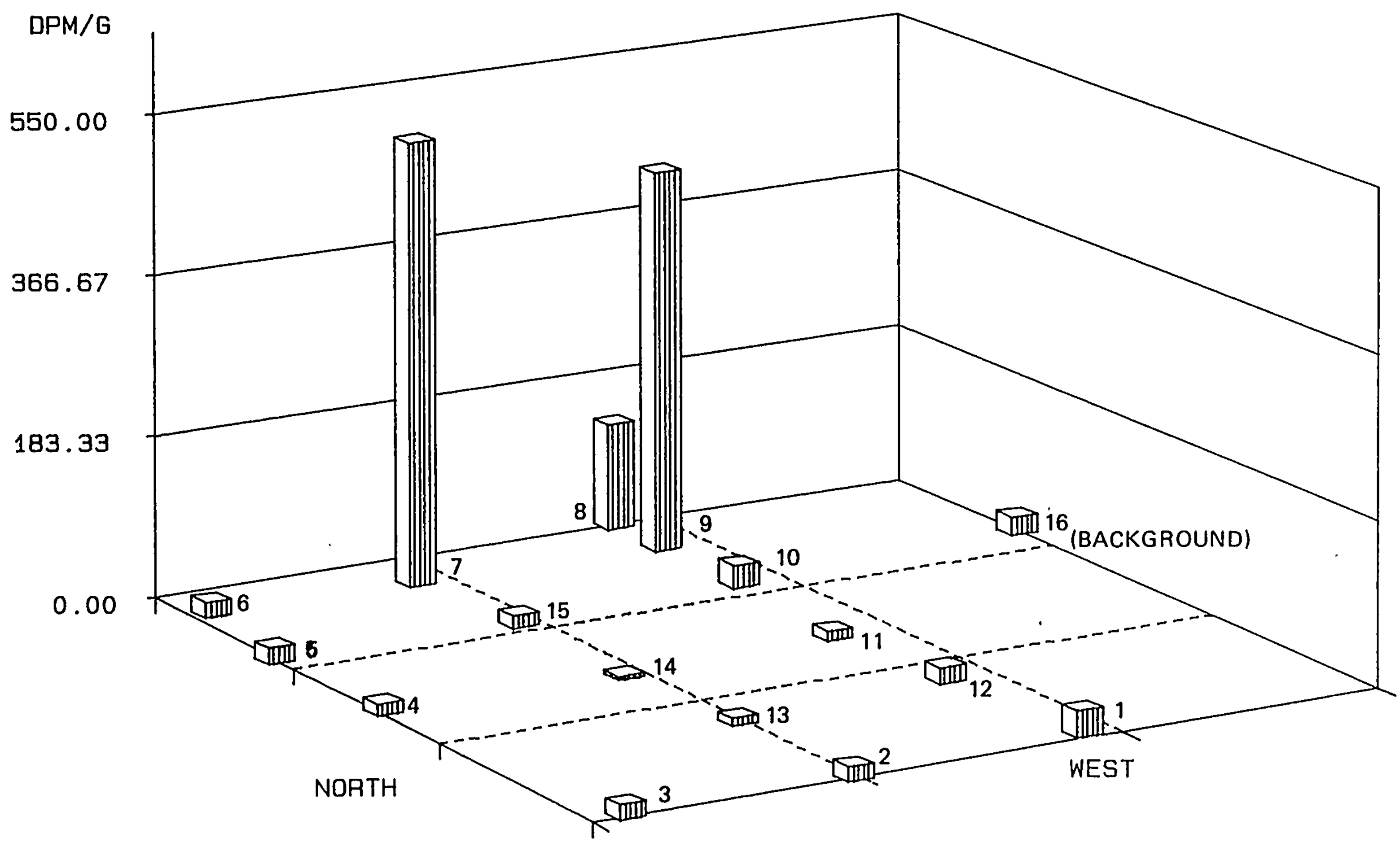


Fig. 7.16. Alpha Activity of Composite Samples

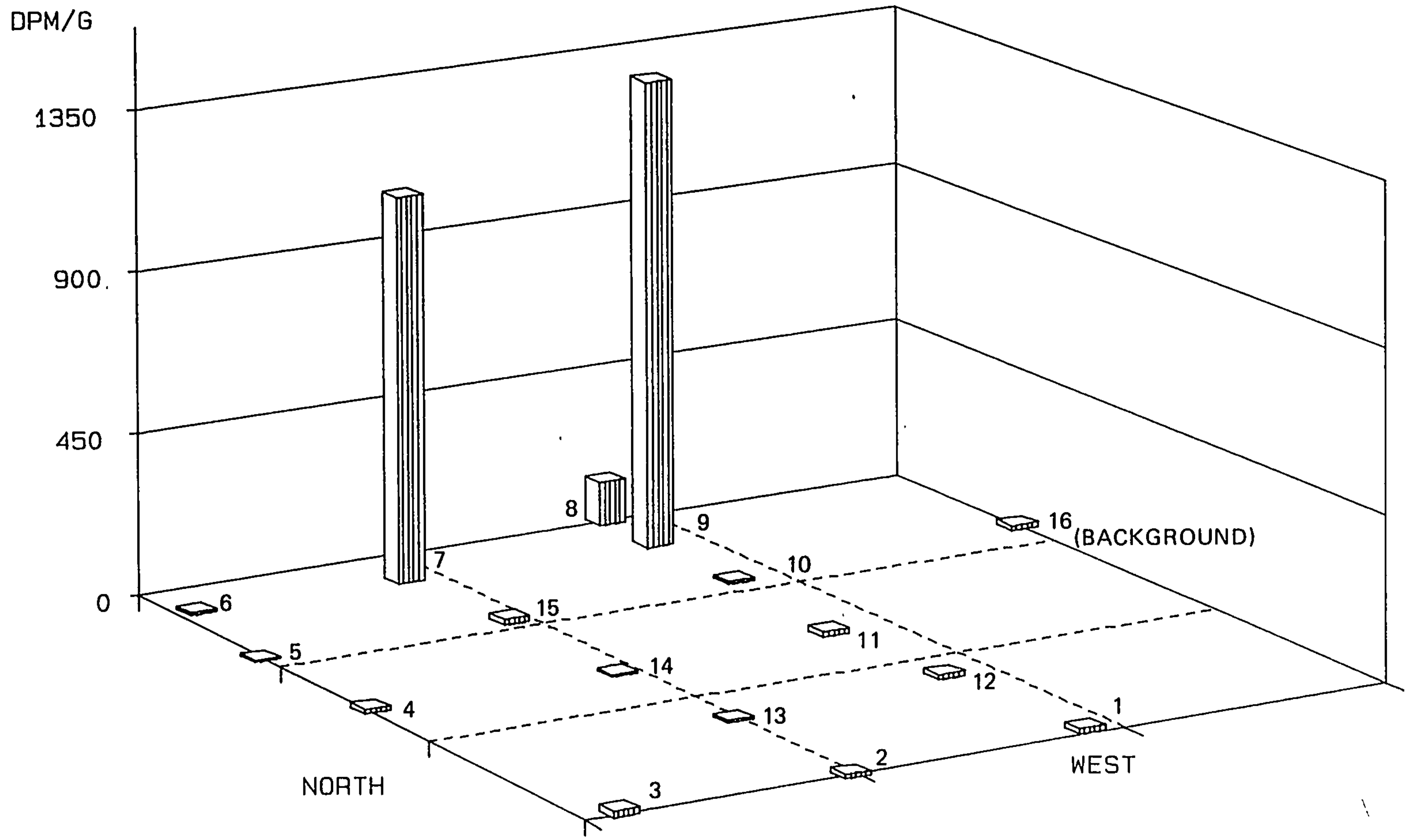


Fig. 7.17. Beta Activity of Composite Samples

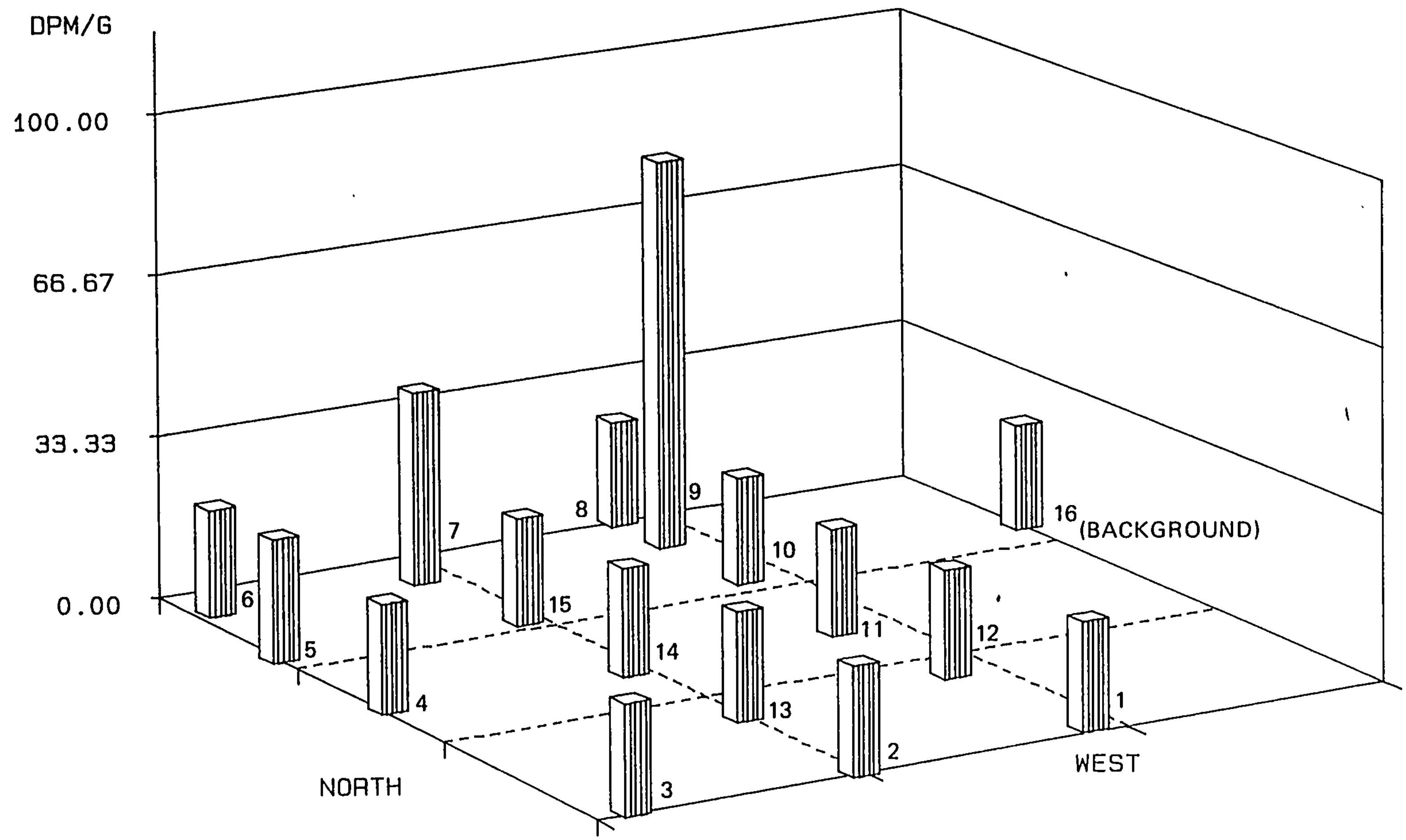


Fig. 7.18. Gamma Activity of Composite Samples

radioactivity was elevated above the background only at Sites 7, 8, and 9. Further characterization of radioactive contamination will be included as part of any additional characterization of the K-1064 site.

7.1.6 Summary of Results

The above discussion leads to the conclusion that the soil contained within the area east of the road bounded by the fence appears to be the only soil within the confines of the K-1064 Unit showing a significant level of contamination. This area was used at one time as a drum storage area for drums containing contaminated oil. Results of a previous sampling effort indicate this to be the only area containing contamination above limits set forth in the General Document in Table 2.2. Additional work will be done to determine the extent of transport of the PCBs, radioactivity, and metals found to be at high concentrations (arsenic, cadmium, chromium, lead, uranium, and nickel) to the surrounding environment. There is some evidence for concern over the PAH concentrations but the levels found do not warrant specifically analyzing for them. Instead, it is proposed that the movement of PCBs be used as a marker for the movement of the PAHs.

7.2 GROUNDWATER MONITORING RESULTS

The results of the groundwater monitoring conducted at the K-1064 Unit (Table 7.2, Table 7.3, and Appendix A) indicate that the groundwater contains some metal, PCB, volatile organic, and radioactive contamination.

Table 7.2 Groundwater Contaminants at K-1064 Burn Area/Peninsula Storage Unit (ALL WELLS)

Analyte	Number of Samples Taken	Number of Samples > Guideline	Table 2.2 Guideline (ug/l)	Range (ug/l)
1,1,2 Trichloroethane	27	07	6.1	9.0 - 24.0
1,1 Dichloroethene	27	12	7.0	13.0 - 22.0
Antimony	26	02	10.0	55.0 - 75.0
Antimony - Filtered	26	02	10.0	72.0 - 100.0
Arsenic	26	01	50.0	200.0
Arsenic - Filtered	26	01	50.0	200.0
Barium	26	01	1000.0	1400.0
Beryllium	26	06	0.00714	0.3 - 0.7
Beryllium - Filtered	26	03	0.00714	0.4 - 0.5
Copper	26	01	1300.0	1900.0
Lead	26	01	50.0	84.0
PCB (Araclor-1254)	27	01	0.0045	4.9
Trichloroethene	26	06	5.0	6.0 - 51.0

	Number of Samples Taken	Number of Activity Values > Detection Limits	Range
Radioactivity (pCi/l)*			
Gross alpha	26	26	4.0 - 220.0
Gross beta	26	26	9.1 - 298.0

*Individual Radionuclides are listed in Table 7.3.

Table 7.3 Groundwater Contaminants for Which No Guidelines Exist (All wells)

	Range	Number of Samples Taken	Number of Samples > Detection Limits
METALS (mg/l)			
Aluminum	0.02 - 220.0	26	22
Aluminum - F*	0.021 - 0.18	26	16
Boron	0.05 - 6.0	26	26
Boron - F	0.038 - 4.8	26	26
Calcium	31.0 - 3400.0	26	26
Calcium - F	7.3 - 200.0	26	26
Chloride	2.0 - 150.0	26	26
Fluoride	0.2 - 7.0	26	26
Iron	0.0056 - 300.0	26	25
Iron - F	0.0044 - 0.61	26	15
Lithium	0.0046 - 0.91	26	20
Lithium - F	0.004 - 0.42	26	19
Magnesium	9.1 - 400.0	26	26
Magnesium - F	5.5 - 26.0	26	26
Molybdenum	0.013 - 0.039	26	3
Molybdenum - F	0.25 - 0.035	26	3
Niobium	0.0072 - 0.043	26	8
Niobium - F	0.0089 - 0.038	26	7
Phosphorus - F	0.27	26	1
Potassium	0.72 - 190.0	26	25
Potassium - F	2.6 - 18.0	26	24
Silicon	2.9 - 510.0	26	26
Silicon - F	2.8 - 4.3	26	26
Sodium	6.5 - 870.0	26	26
Sodium - F	7.3 - 780.0	26	26
Strontium	0.028 - 6.9	26	26
Strontium - F	0.073 - 1.0	26	26
Sulfate	35.0 - 960.0	26	26
Titanium	0.004 - 8.0	26	16
Titanium - F	0.0037 - 0.01	26	9
Uranium	0.004 - 0.044	26	25
Uranium - F	0.001 - 0.062	26	24
Vanadium	0.0065	26	1
Zirconium	0.006 - 0.16	26	3
Zirconium - F	0.0061 - 0.013	26	2

(continued)

Table 7.3 (continued)

	Range	Number of Samples Taken	Number of Samples > Detection Limits
ORGANICS (ug/L)			
2-Methyl-2-Pentanone	8.0J	27	1
Butylbenzylphthalate	0.8J	27	1
BHT	1.0 - 14.0	6	6
Cyclohexanone	2.0	1	1
Di-N-Octylphthalate	0.2J - 0.6J	17	6
Diacetone alcohol	4.0A - 2000.0	7	7
Diethylphthalate	0.6J - 2.0J	27	2
Hexamethylcyclotrisiloxane	2.0 - 3.0	5	5
Prometon	2.0	1	1
Trans-1,2-Dichloroethene	2.0J - 18.0	26	6
RADIONUCLIDES (pCi/l)			
Technetium-99	172.0 - 1113.0	4	4
Thorium-234	4.0 - 29.0	4	4

8. SAMPLING PLAN

8.1 SAMPLING AND ANALYTICAL STRATEGY

The objectives of the RFI investigation of the K-1064 Unit are: (1) characterization of both the horizontal and vertical extent of contamination, (2) the determination of the contribution of each of the possible pathways identified in Section 6 to the overall contaminant migration away from the source, and (3) the ability to better define the "contaminants of concern". For this Phase I of the investigation, the existing monitoring data contained in Section 7 will be used to limit the investigation to only those classes of contaminants that are expected to be present and hence could be expected to be released from the K-1064 Unit. The data from Section 7 has been used to determine the location of a source of contamination and to determine the most likely route of migration from that source. The information contained therein reveals the possibility for metal, radioactivity, and semi-volatile organic (PCBs and PAHs) contaminant release. Previous studies (Biggs, G. G.; Chiou, C. T., et. al.; and Means, J. C., et. al.) on partitioning properties of organic compounds have shown that adsorption of PCBs and PAHs on soil is due to the same mechanism and is of comparable magnitude for a given soil composition. Experimental partitioning values of typical PCBs and PAHs were found to be at levels above which significant leaching from soil to water occurs. Typical PCBs are found to be more stable to biodegradation than typical PAHs found in the soil (Tabak, H. H., et. al.). The facts that PCBs will be similar in soil/water partitioning and more stable to biodegradation within a given soil are used as the basis for using PCBs as tracers for PAHs at this site. All samples collected as a part of this study will, therefore, be analyzed for metals, radioactivity (gross alpha, beta, and gamma), and PCBs as described in Section 8.4. VOA analysis will not be conducted based on the data from previous soil sampling at the site.

Section 6 discusses the possible pathways of migration away from the site for any contaminant released from the site. For the K-1064 area, the principal migration pathway is via soil contamination and the resulting contamination of the groundwater. However, due to the manner in which the site was operated, surface water is also seen as a potential pathway for contaminant migration. Thus this investigation of the site will consist of the collection of soil (both deep and shallow samples), surface water, and groundwater data and their evaluation for the contaminants discussed above. The Phase I soil samples will be collected down-gradient from the source to allow for characterization of the horizontal extent of migration. The division of each deep boring into individual 4-ft segments with each undergoing analysis will permit a crude estimate to be made of the vertical extent of contamination.

Based on the K-1064 Unit Phase I findings, a determination of the need for a Phase II investigation will be made. If it is determined that a Phase II investigation is warranted, then a Phase II sampling plan will be drafted and submitted. A Phase II investigation would include collection of samples from additional locations as determined to be necessary to better define any contaminant plume located by the Phase I investigation. Since the investigation described in Section 7 both defined a source of contamination and determined that no migration of the contaminants had occurred in the westerly direction, no additional soil sampling sites are expected to be required after the Phase I investigation. Included in a Phase II investigation would be the determination of contaminant specific environmental properties (i.e., soil attenuation capacity, biodegradability, etc,) for those contaminants identified in phase I as "contaminants of concern."

8.2 STATISTICAL SETUP FOR SAMPLING

8.2.1 Soil Sampling

Each phase of the investigation will consist of soil sampling, chemical analyses, and statistical analysis of resultant data. Additional phases will continue until conclusions can be drawn regarding the extent of the release, and decisions can be made about appropriate remedial actions. The first phase of sampling is designed to provide initial estimates of contaminant levels in the potential release area and indicate the general directions of possible contaminant movement, identify variation sources, and estimate their magnitude. This information will be used to direct the next phase (if needed). Figure 8.1 shows the general layout of the region and the placement of 17 sampling locations. There are two locations for obtaining background samples and 15 locations for monitoring potential releases. Of these 17 locations, 12 are locations where drillings will be made to bedrock and 5 are locations where 3 surface type corings will be angled into the side of the steep creek bank. Figure 8.2 provides an illustration. There is one background sampling location for each type of sampling.

For the first phase of sampling, there is approximately one coring per each 50- x 50-ft sector or 2,500 ft^2. The guidelines given in "Petitions to Delist Hazardous Wastes: A Guidance Manual,[12] (EPA/530-SW-85-003, April 1985, p. 40) suggest one result per every 100- x 100-ft sector or 10,000 ft^2. For each drilling to bedrock, a soil sample will be taken from (a) every distinct layer of soil which might be affected by a release, (b) boundaries between soil layers, and (c) regular intervals of 4 ft of depth in thick homogeneous layers. The first sample will be taken at surface level. For thicker layers, soil from two adjacent 2-ft split-barrels will be composited. Particular attention will be taken not to composite across soil layer types or layer boundaries. Sampling will be to refusal. These individual samples will be divided with a portion of each sample from the borehole going into a single borehole composite and a portion of each sample individually saved in case better resolution on the composite or a backup analysis is needed. The sampling approach is based on RCRA Facility Investigation Guidance,[1] Volume II," page 8-34. (See Figure 8.3.) At each creek bank location there will be three surface type corings at different heights on the hillside. Each coring will be angled at approximately 45 degrees into the side of the hill and taken to a depth of 2 ft. A soil sample will be taken from every distinct layer of soil and from boundaries between soil layers. The first sample will be taken from the soil type found at the surface. Should refusal occur prior to reaching a depth of 2 ft, then either a "bottom" sample will be taken at the point of rejection or the sample will be relocated in order to avoid a small obstruction. If there is more than one soil layer found in a coring, individual samples will be divided with a portion of each sample going into a single coring composite and a portion of each sample individually saved, in case

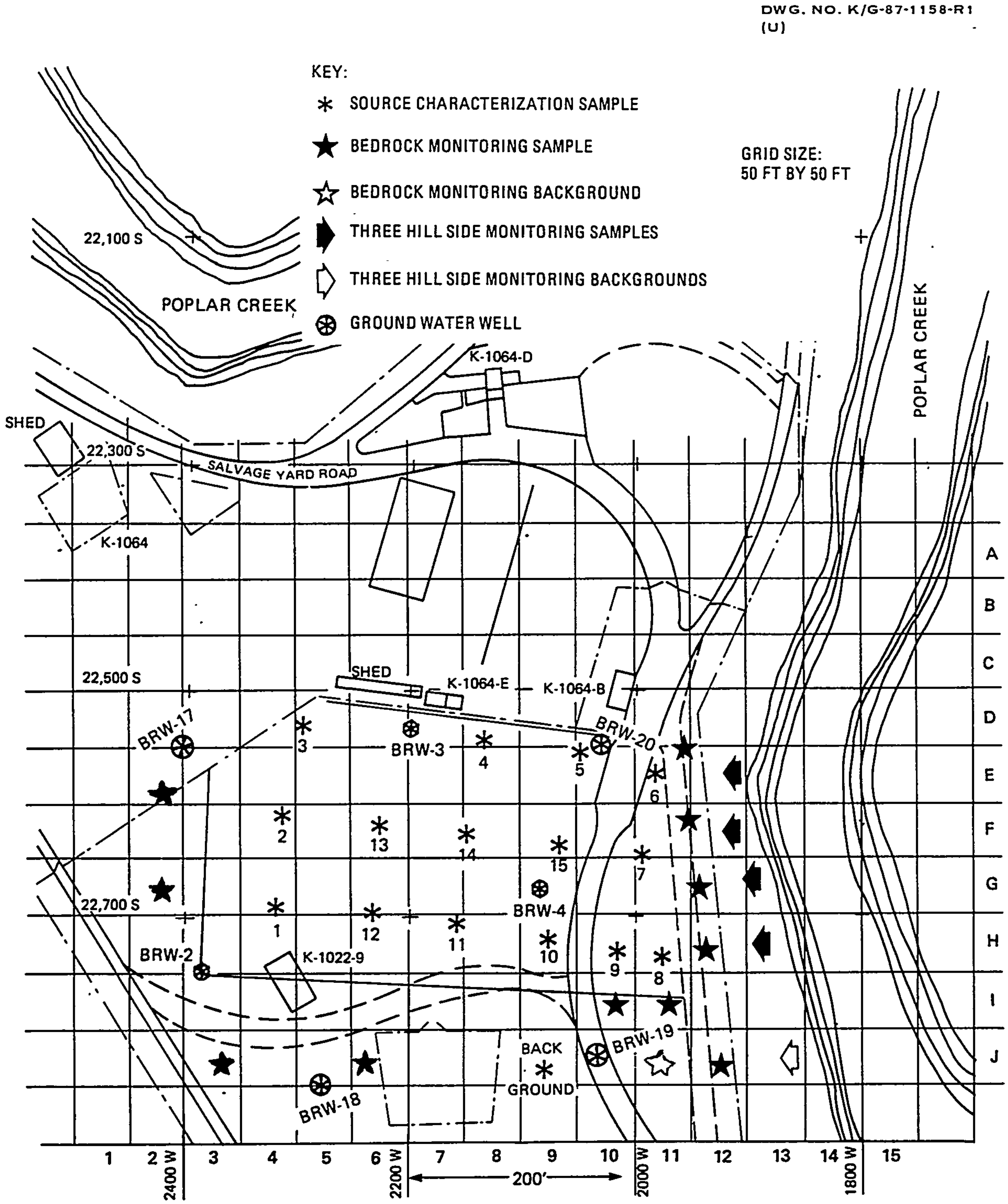


Fig. 8.1. Sampling Locations at K-1064 Site

DWG. NO. K/G-87-1021
(U)

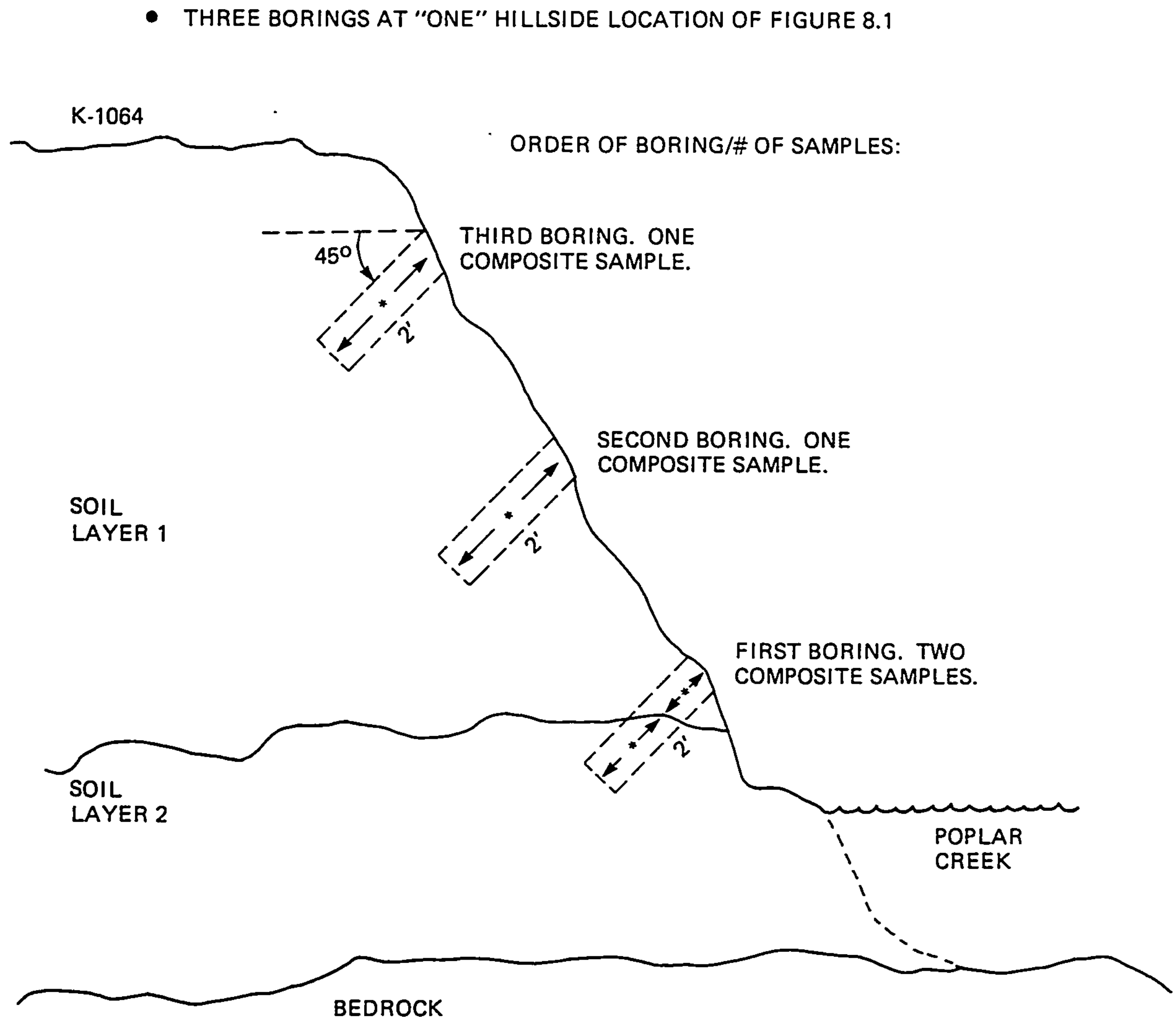


Fig. 8.2. Sampling on the Hillside

DWG. NO. K/G-87-443
(U)

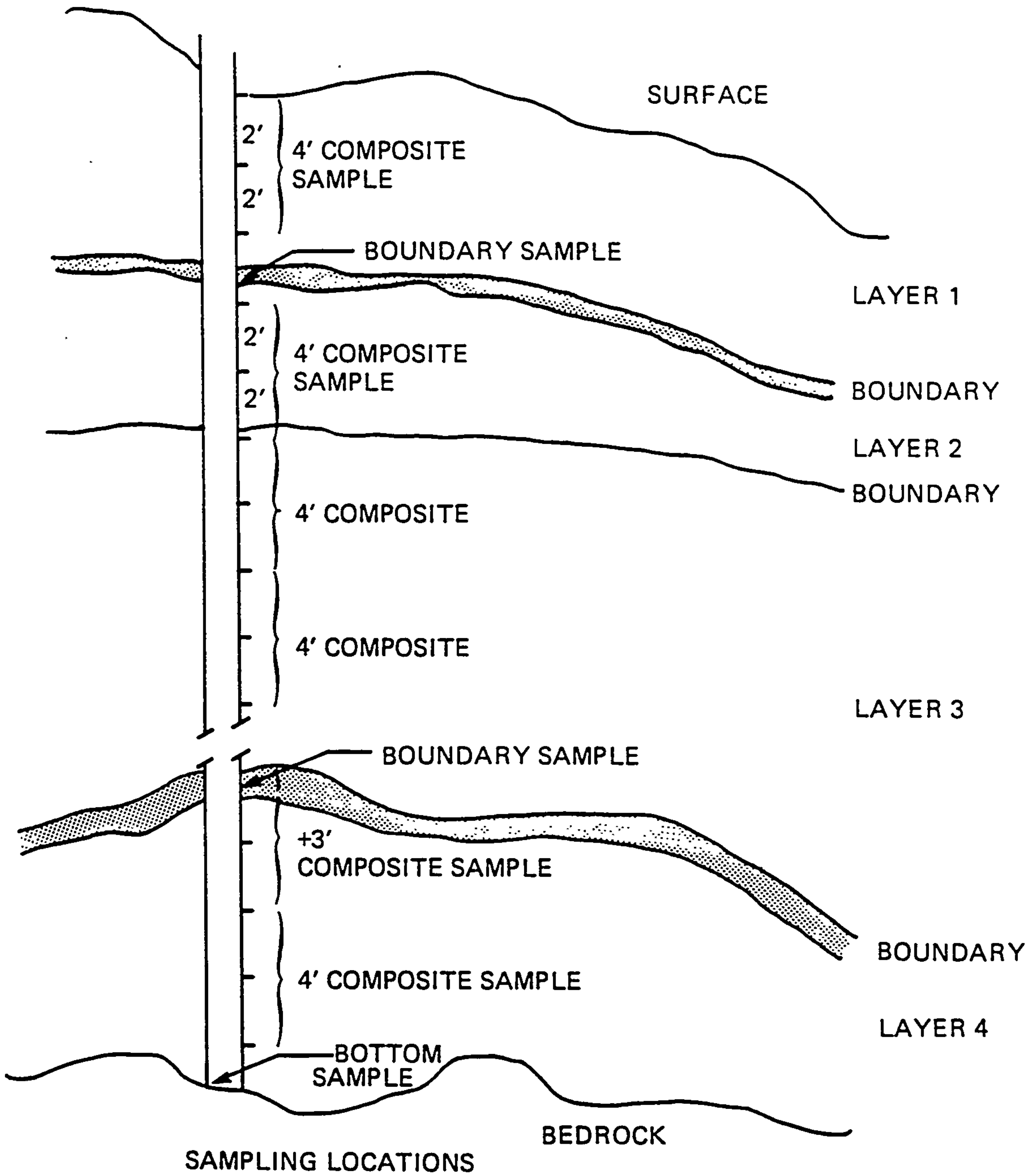


Fig. 8.3. Sampling to Bedrock

better resolution on the composite or a backup analysis is needed. These instructions are based on RCRA Facility Investigation Guidance,[1] Volume II, p. 8-34. (See Figure 8.2.)

For QA and QC purposes, approximately 10% of the soil samples will be sampled and analyzed in duplicate.

The drilling order of the boreholes and hillside corings will be randomized. (See Table 8.1 for the randomization schedule.) The order of samples taken within each location will not be randomized since the sampling depths depend on the nature of the core and the method of soil removal from the borehole.

The drilling or coring location within each 50- x 50-ft sector is not randomly located within the sector. Figure 8.1 shows the relative drilling locations with respect to physical landmarks and potential release sources. The drilling locations will be determined by the physical terrain in the local areas and the ability to obtain representative samples. Exact coordinates will be determined by surveying the site after sampling has occurred. Exact locations of the hillside borings will include the elevation from the creek. The systematic nature of the drilling locations will improve statistical properties of modeling efforts.

There are twelve drillings to bedrock, including the one background drilling. If the average depth to bedrock is 15 ft and only one distinct soil layer, there will be approximately 4 samples per coring.

8.2.2 Surface Water

Surface water runoff will be collected in naturally occurring flow points at the K-1064 site. These should be at northern, eastern, southern, and western points along the site perimeter. Sampling should occur during at least two periods of rain. Duplicate grab samples will be taken at each location and from a background rainfall collector to located at the site; there will be 10-20 samples taken for analysis.

Table 8.1. Drilling order

BEDROCK DRILLING

Drilling Order	Figure 8.1 Coordinate
1	12J
2	12G
3	2E
4	11F
5	11J
6	6J
7	11E
8	12H
9	11I
10	2G
11	3J
12	10I

HILLSIDE DRILLING

Drilling Order	Figure 8.1 Coordinate
1	12F
2	13G
3	13J
4	13H
5	12E

NOTE: There are three borings to be made at each location designated as HILLSIDE. These should be according to Figure 8.2 and obtained starting with the location closest to the creek and continuing to the location near the top of the bank.

8.2.3 Groundwater Sampling

Under the ORGDP Groundwater Monitoring Program, monitoring wells have been constructed in locations shown in Figure 5.1.

8.3 FIELD SAMPLING

8.3.1 Site Preparation

In order to accurately locate the soil sampling sites within the K-1064 Unit, arrangements will be made through Energy Systems Engineering to have the actual sampling points (as described in Section 8.2) surveyed and marked. Any overhead or underground utilities that could possibly interfere with the required drilling will be identified, located, and the sampling points will be adjusted so as to avoid contact with any of the utilities. In addition to marking the sampling points, a detailed map, indicating the sampling points and their exact co-ordinates will need to be prepared.

Surface water grab-type sampling will occur after rainfall has provided adequate surface water for collection. The sites for surface water collection will be determined as described in Section 8.2.2. After collection of the samples, their location will be depicted on the sampling location map of the area.

8.3.2 Equipment and Supplies

The drillers will provide all necessary drilling equipment (hollow core auger, stainless steel split-barrel sampler, etc.) and grout supplies for filling bottles after samples. The following field sampling supplies will be required:

- hand auger
- nonionic detergent, Micro (International Products Corp.)
- distilled water
- isopropyl alcohol
- glass containers, pre-cleaned, with teflon lined lids, one quart capacity

- polyethylene containers, pre-cleaned, one liter capacity
- logbook, bound
- chain of custody seals
- sample labels
- chain of custody forms
- stainless steel trays
- aluminum foil
- stainless steel spatulas
- dipper
- nitric Acid

The above listed equipment is to be supplied by the sampling team. Additionally, it will be necessary to have some supplies delivered to the site by Energy Systems. These supplies would include a 55-gallon drum (See Section 13.3 of the QA Plan for drum specifications) for collection of decontamination/washing solutions as well as the excess soil generated during drilling.

8.3.3 Soil Sampling Procedure

8.3.3.1 Deep Soil Samples

Collection of deep soil samples (to refusal) from this site will follow the guidelines discussed in Section 8.2 and will be obtained utilizing ASTM Method D-1586-84 Penetration Test Split-Barrel Sampling of Soils.[13] This soil sampling procedure is detailed in the QC Program, Method ESP 303-4. The drilling will be performed by a private drilling contractor. In order to obtain a sample that is undisturbed by the auger operation, a hollow core auger will be used to remove the soil above each segment to be sampled, the split-barrel sampler will then be driven into the soil through the center of the auger thus obtaining an undisturbed core sample below the penetration of the deepest auger flight.

A stainless steel split-barrel sampler will be used to remove samples in 2-ft segments. Two 2-ft segments will then be transferred to an aluminum foil lined stainless steel pan, homogenized, and transferred to precleaned one-quart jars (the QC Program, Method ESP 308-1) following the compositing protocol described in Section 8.2 of this document. Duplicate core samples will be submitted to the analytical laboratory from at least 10% of the coring segments (segments for duplication are indicated in Section 8.2). The location of background corings is also indicated in Section 8.2. All corings are to be continuous until refusal.

After the sampling of each coring is complete, the borehole is to be backfilled with a grout column as described in the General Document, Section 7.1.3. This will prevent any surface water infiltration into the groundwater via the sampling boreholes.

8.3.3.2 Hillside Samples

Samples from the hillside area of the bank of Poplar Creek will be collected under the protocol described in Section 8.2. Samples will be collected using a hand auger as detailed in the QC Program, Method ESP 303-2.

8.3.4 Surface Water Sampling

The locations and criteria for collection of surface water grab samples are described in Section 8.2. Four liters of sample (1-1 liter polyethylene bottle, 3-1 liter glass bottles) will be collected during each sampling at each sampling point. The samples contained in the polyethylene bottles are intended for both metal and radiochemical analyses and thus will be acidified to a pH<2 with HNO_3. The samples contained in the glass bottles are intended for semi-volatile organics; thus, the only preservation necessary is cooling to <4°C.

8.3.5 Equipment Decontamination and Waste Management

Between samples, the equipment used for sampling and sample transfer will be cleaned with the nonionic detergent and water, rinsed with distilled water, rinsed again with isopropyl alcohol, and then a final rinse with distilled water. All the solutions generated during this cleaning process will be collected in 55-gallon drums for later disposal. The 55-gallon drums of waste generated as a result of the sampling will be labelled in such a manner as to allow a correlation between drum contents and the specific sampling site. Additional general requirements for decontamination and waste management are outlined in the QC Program, Methods ESP 901 and ESP 1000, respectively.

For QA purposes, an equipment rinsate (three quart bottles) will be collected at least once a day, preserved according to the QC Program, Method Number ESP-701, and submitted to the analytical laboratory for metals, radioactivity, and PCB analyses. The final distilled water equipment rinse discussed above will serve as the source of this rinsate. These equipment rinsates will verify the adequacy of the decontamination procedure. Along with equipment rinsate, a sample of distilled water (three quart bottles) that would be used in decontamination will be submitted at least once daily. This sample will be a composite composed of samples from each container being used to store decontamination water.

8.3.6 <u>Sample Labelling and Chain-of-Custody</u>

Sample containers will be labelled in accordance with the QC Program, Method ESP-500. Each sample (container) will be assigned a unique Sample Identification Number (SIN). The format of this SIN is described in Section 8.4 of the QA Plan. The sample containers will be sealed and transported to the laboratory under chain of custody protocol, a description of which is contained in the QC Program as Method ESP-500. The sampling date, site identification, time, sample identification number, sampler's name, and the surveyed coordinates of the sample will be recorded in the logbook. In addition to the required entries, any other pertinent information and/or observations (e.g., weather, unusual occurrences) shall be recorded. The logbook will be kept in a manner consistent with the QC Program, Methods ESP 400 and ESP 500. The logbook, this sampling plan, and a map of the site must be available on site if sampling activities are being conducted.

8.4 ANALYTICAL PROTOCOL

All of the soil samples received by the analytical laboratory as part of this investigation will be analyzed for total metals, PCBs, and radioactivity (gross alpha, beta, and gamma). After soil subsampling is complete, the remainder of the sample will be archived. If sample analysis indicates soil total contaminant metal level(s) to be such that accepted regulatory levels, such as leachate concentration from Extraction Procedure Toxicity (EP-TOX) for a worst case situation (e.g., 100% extractability of the metals for EP-TOX) would be exceeded, then the regulatory test would be performed on a sub-sample of the archived sample and the results documented as part of the sample package. From any locations showing significant PCB concentrations, a sample will also be analyzed for PAHs. The equipment rinsates received will be analyzed for metals, radioactivity, and PCBs.

Groundwater was listed as a migratory pathway for contamination in Section 6 and thus will need to be examined as part of this investigation. The field work directly associated with the K-1064 Unit, however, will not involve the sampling of any groundwater wells. Instead, the requisite wells will be installed and their actual sampling will then follow the protocol outlined in the Groundwater Protection Plan. The data generated from these wells will become part of the ORGDP Groundwater Data Base which will be accessed during the data analysis phase of this RFI investigation.

8.5 SAMPLE ANALYSIS

Throughout the K-1064 Unit sampling plan generic terms are used to describe the analyses to be performed (e.g., metals), the following describes the specific parameters for which analyses will be conducted. In addition, the procedures of choice, including sample preparation and sample analysis methods will be referenced.

Metals analysis as used in the above discussion should include analysis for the metals listed in Table 8.2. Also included in the table are the recommended analytical procedures for both the soil and the water samples.

Table 8.2 Metallic Elements of Interest at the K-1064 Unit

Element	Analytical Proc.
Arsenic	EPA-7060
Cadmium	EPA-6010
Chromium	EPA-6010
Lead	EPA-6010
Nickel	EPA-6010
Uranium	EPA-6010

The analysis method of choice for PCBs is EPA-8080. As discussed in Section 8.1, PCB will be used as a tracer for PAH contamination. If determinations of PAH concentrations are necessary, the analysis method of choice is EPA-8270 (semivolatiles) in which the individual PAH compounds will be identified. The soil analysis procedure for gross alpha, beta, and gamma is outlined in K/HS-132, Section 7. The water analysis procedure of choice is EPA-900.0.

The analytical procedures cited are for reference purposes only, the QA/QC requirements for this investigation are outlined in K/HS-231 and K/HS-132. These requirements are minimum requirements and take precedence over those contained in the cited methods.

9. DATA MANAGEMENT PROCEDURES

The results of the chemical analyses of samples from the potential release area will be presented in a clear and logical format, so as to best illustrate any patterns in the data. These will include tabular, graphical, and other visual displays such as maps and contour plots described in the General Document in Table 8.1, as appropriate to the data.

Specifically, values which are recorded as less than detection limits will be handled according to RCRA Groundwater Monitoring Technical Enforcement Guidance Document,[14] OSWER-9950.1, September 1986, which directs calculation through the use of Cohen's statistical methodology where appropriate. This is found in "Tables for Maximum Likelihood Estimates from Single Truncated and Singly Censored Samples," Technometrics,[15] Volume 3, pages 535-541, 1961.

Average contaminant values for the release area will be compared to average background values and to preestablished limits. Statistical modeling methods, such as least squares and kriging, will be used to estimate response surfaces for use in developing concentration contours for the contaminants. Statistical confidence bounds (upper, lower, or both) will be determined for the contaminants at a given sampling location and depth, where appropriate.

The specific type of statistical analysis depends on the variability of the data. Analysis of the data will be performed according to sound statistical practice by qualified statisticians and will be documented. Data validation, management, and corrective actions are addressed in the Data Management Plan. Detection limits will be reported using an arithmetic bound calculated using 0 as the detection limit and an arithmetic bound calculated using the actual detection limit. EPA public domain kriging software will be used in modeling to develop concentration contours over the area.

10. HEALTH AND SAFETY PROCEDURES

10.1 INTRODUCTION

Special requirements and procedures to protect the health and safety of the investigating team, ORGDP site personnel, and the general public during the RFI of the K-1064 Unit are addressed in this section.

The General Document details the health, safety, environmental, security, plant protection, and emergency response organizations which are in place at the ORGDP. These organizations provide the support to the ORGDP to meet the requirements for health and safety during the RFI. They provide the communication, response, and reporting for any plant emergency; on-site medical facilities with medical surveillance, treatment, monitoring, and periodic physical examinations; health physics and industrial hygiene surveillance hazard evaluation and control; operational safety accident prevention and control; and plant security and visitor control.

In addition, the General Document identifies the organizational responsibilities for health and safety at the SWMUs during RFIs. The document includes the methodology for establishing the work zones of each SWMU, the level of protection required in the exclusion zone, decontamination procedures, personnel exposure limits, monitoring requirements, and respiratory protection.

10.2 KNOWN HAZARDS AND RISKS

Substances of concern at the K-1064 Unit are waste solvents, organics and low-level radioactively contaminated waste oil. All of these materials were stored in the K-1064 area and monitoring data indicate that residual contamination is present at the site. These data established the personnel protection as Level D for this SWMU.

10.3 LEVEL OF PROTECTION

The level of personnel protection and monitoring is designated below.

Level Designation		Monitoring Parameters	
A		Airborne Pollutants	
B		Explosion Potential	
C		Radiation	X
D	X		

10.4 DESIGNATION OF WORK AREA ZONES

The three zones (Exclusion, Contamination Reduction, and Support) will be established for each drilling in accordance with the methodology developed in Section 9 of the General Document. The safety equipment required for the designated level of protection and the decontamination procedures are also covered in the General Document.

10.5 EXPOSURE LIMITS

The personnel protection recommended for work activity in the exclusion zone of the K-1064 Unit is Level D. If any of the following conditions occur, work will be stopped, the area will be evacuated, and the ORGDP Industrial Hygiene Department will be contacted to determine necessary actions to mitigate health and safety concerns:

1. Unusual odors are detected.
2. Significant amounts of airborne dust are present anywhere in the Exclusion zone.

The responsibility for limiting the exposure of the workers to nonhazardous levels of radiation and ultimate control for the site's safety resides in the Site Health and Safety Officer (SHSO) using the instruments described in the Section 9 of the General Document. The SHSO will monitor for radiation in the air and adjacent to sample drillings and/or diggings with a radiation meter capable of measuring 0.1 mR/h. Should the reading exceed 0.1 mR/h, the SHSO will order work to be stopped and the crew removed from the exclusion zone. The SHSO will request the presence of a health physicist on-site who will assess the potential hazard of the conditions and determine whether or not work should continue.

Sampling personnel must be aware that equipment used for soil sampling could become contaminated with radioactive material. Personal safety shoes and other protective equipment could also become contaminated. Surveys should be performed on such equipment in the soil sampling areas before and after each operation. Each survey should include monitoring all applicable personnel and equipment. Equipment that is found to be contaminated above the guidelines for unrestricted release (alpha - 5,000 dpm/100 cm^2 surface, 1,000 dpm/100 cm^2 transferrable, and 0.1 mR/h beta and gamma) will be decontaminated. Should the reading exceed an action level of 2 mR/h (set by the ORGDP Health Physics as an action point), the SHSO will order work to be stopped and the crew will be removed. The SHSO will request the presence of a health physicist on-site who will assess the potential hazard of the conditions and determine whether or not work should continue.

REFERENCES

1. RCRA Facility Investigation Guidance, Volumes I - IV, EPA-530/SW-87-001, OSWER 9502.00-6C, U.S. Environmental Protection Agency, December 1987.

2. RFI Plan - General Document, Oak Ridge Gaseous Diffusion Plant, Oak Ridge, Tennessee, K/HS-132, Martin Marietta Energy Systems, Inc., Oak Ridge Gaseous Diffusion Plant, March 1987.

3. Environmental Surveillance Procedures Quality Control Program, ESH/SUB/87-21706/1, C. W. Kimbrough, L. W. Long, and L. W. McMahon; Martin Marietta Energy Systems, Inc., Oak Ridge Gaseous Diffusion Plant, September 1988. (Formerly The Remedial Action Program QC Manual)

4. ORGDP Remedial Action Program Quality Assurance Plan, K/HS-231, Martin Marietta Energy Systems, Inc., Oak Ridge Gaseous Diffusion Plant, December, 1988.

5. ORGDP Remedial Action Program Data Management Plan, K/HS-232, Martin Marietta Energy Systems, Inc., Oak Ridge Gaseous Diffusion Plant, December 1988.

6. ORGDP Groundwater Protection Program Management Plan, K/HS-258, Martin Marietta Energy Systems, Inc., Oak Ridge Gaseous Diffusion Plant, 1988.

7. Hydrogeology of the Oak Ridge Gaseous Diffusion Plant, K/SUB/85-2224/9, Geraghty and Miller, Inc., July 1986.

8. ORGDP Geologic Map, ORNL-DWG-86/9769, R. H. Ketelle; Martin Marietta Energy Systems, Inc., Oak Ridge Natl. Lab., to be published at the Oak Ridge Natl. Lab.

9. Geologic Map of the Oak Ridge Area, Tennessee, W.M. McMaster; U.S. Geologic Service, 1958.

10. The Environmental Surveillance of the U.S. Department of Energy Oak Ridge Reservation and Surrounding Environs During 1987, Volume 1, ES/ESH-4V1, J. G. Rogers, et. al.; Martin Marietta Energy Systems, Oak Ridge Gaseous Diffusion Plant, April 1988.

11. Sampling and Analysis Plan for the K-1064 Burn Area/Peninsula Storage, K/PS-1289, Martin Marietta Energy Systems, Inc., Oak Ridge Gaseous Diffusion Plant, to be published at the Oak Ridge Gaseous Diffusion Plant.

12. Petitions to Delist Hazardous Waste: A Guidance Manual, EPA/530-SW-003, U.S. Environmental Protection Agency, April 1985.

13. Standard Method for Penetration Test Split-Barrel Sampling of Soils, D-1586-84, American Society for Testing and Materials, November 1984.

14. RCRA Groundwater Monitoring Technical Enforcement Guidance Document, OSWER-9950.1, Environmental Protection Agency, September 1986.

15. A. C. Cohen, "Tables for Maximum Likelihood Estimates from Single Truncated and Singly Censored Samples," Technometrics, 3, 535-41, (1961).

APPENDIX A

GROUNDWATER MONITORING WELL DATA

BRW-2

ANALYTE	7/22/87	10/16/87	12/07/87	3/07/88	9/29/88
1,1,1-TRICHLOROETHANE UG/L	5	65	<5	37	
1,1,2,2-TETRACHLOROETHANE UG/L	<5	<5	<5	<5	
1,1,2-TRICHLOROETHANE UG/L	<5	<5	<5	<5	
1,1-DICHLOROETHANE UG/L	7	10	<5	<5	
1,1-DICHLOROETHENE UG/L	5	<5	4J	6	
1,2,4-TRICHLOROBENZENE UG/L	<10	<5	<5	<5	
1,2-DICHLOROBENZENE UG/L	<10	<5	<5	<5	
1,2-DICHLOROETHANE UG/L	<5	<5	<5	<5	
1,2-DICHLOROPROPANE UG/L	<5	<5	<5	<5	
1,3-DICHLOROBENZENE UG/L	<10	<5	<5	<5	
1,4-DICHLOROBENZENE UG/L	<10	<5	<5	<5	
2,4,5-T UG/L	<0.1	<0.1	<0.1	<0.1	
2,4,5-TP (SILVEX) UG/L	<0.1	<0.1	<0.1	<0.1	
2,4,5-TRICHLOROPHENOL UG/L	<50	<25	<25	<25	
2,4,6-TRICHLOROPHENOL UG/L	<10	<5	<5	<5	
2,4-D UG/L	<1	<1	<1	<1	

GROUNDWATER MONITORING WELL DATA

BRW-2

ANALYTE	7/22/87	10/16/87	12/07/87	3/07/88	9/29/88
2,4-DICHLOROPHENOL UG/L	<10	<5	<5	<5	
2,4-DIMETHYLPHENOL UG/L	<10	<5	<5	<5	
2,4-DINITROPHENOL UG/L	<50	<25	<25	<25	
2,4-DINITROTOLUENE UG/L	<10	<5	<5	<5	
2,6-DINITROTOLUENE UG/L	<10	<5	<5	<5	
2-BUTANONE UG/L	<10	<10	<10	<10	
2-CHLOROETHYLVINYL ETHER UG/L	<10	<10	<10	<10	
2-CHLORONAPHTHALENE UG/L	<10	<5	<5	<5	
2-CHLOROPHENOL UG/L	<10	<5	<5	<5	
2-HEXANONE UG/L	<10	<10	<10	<10	
2-METHYLNAPHTHALENE UG/L	<10	<5	<5	<5	
2-METHYLPHENOL UG/L	<10	<5	<5	<5	
2-NITROANILINE UG/L	<50	<25	<25	<25	
2-NITROPHENOL UG/L	<10	<5	<5	<5	
3,3-DICHLOROBENZIDINE UG/L	<20	<10	<10	<10	
3-NITROANILINE UG/L	<50	<25	<25	<25	

GROUNDWATER MONITORING WELL DATA

BRW-2

ANALYTE	7/22/87	10/16/87	12/07/87	3/07/88	9/29/88
4,4-DDD UG/L	<0.1	<0.1	<0.1	<0.1	
4,4-DDE UG/L	<0.1	<0.1	<0.1	<0.1	
4,4-DDT UG/L	<0.1	<0.1	<0.1	<0.1	
4,6-DINITRO-2-METHYLPHENOL UG/L	<50	<25	<25	<25	
4-BROMOPHENYL-PHENYLETHER UG/L	<10	<5	<5	<5	
4-CHLORO-3-METHYLPHENOL UG/L	<10	<5	<5	<5	
4-CHLOROANILINE UG/L	<10	<5	<5	<5	
4-CHLOROPHENYL-PHENYLETHER UG/L	<10	<5	<5	<5	
4-METHYL-2-PENTANONE UG/L	<10	<10	<10	<10	
4-METHYLPHENOL UG/L	<10	<5	<5	<5	
4-NITROANILINE UG/L	<50	<25	<25	<25	
4-NITROPHENOL UG/L	<50	<25	<25	<25	
ACENAPHTHENE UG/L	<10	<5	<5	<5	
ACENAPHTHYLENE UG/L	<10	<5	<5	<5	
ACETONE UG/L	<10	<10	<10	<10	
ALDRIN UG/L	<0.05	<0.05	<0.05	<0.05	

GROUNDWATER MONITORING WELL DATA

BRW-2

ANALYTE	7/22/87	10/16/87	12/07/87	3/07/88	9/29/88
ALPHA ACTIVITY PCI/L	16.8	13.1	56	4	
ALPHA-BHC UG/L	<0.05	<0.05	<0.05	<0.05	
ALUMINUM MG/L	0.081	<0.02	0.031	<0.02	
ALUMINUM-F MG/L	0.097	<0.02	0.072	0.091	
ANTHRACENE UG/L	<10	<5	<5	<5	
ANTIMONY MG/L	<0.05	<0.05	<0.05	<0.05	
ANTIMONY-F MG/L	<0.05	<0.05	<0.05	<0.05	
ARSENIC MG/L	<0.005	<0.005	<0.005	<0.005	
ARSENIC-F MG/L	<0.005	<0.005	<0.005	<0.005	
BARIUM MG/L	0.07	0.04	0.014	0.017	
BARIUM-F MG/L	0.057	0.041	0.014	0.018	
BENZENE UG/L	<5	<5	<5	<5	
BENZO(A)ANTHRACENE UG/L	<10	<5	<5	<5	
BENZO(A)PYRENE UG/L	<10	<5	<5	<5	
BENZO(B)FLUORANTHENE UG/L	<10	<5	<5	<5	
BENZO(G,H,I)PERYLENE UG/L	<10	<5	<5	<5	

GROUNDWATER MONITORING WELL DATA

BRW-2

ANALYTE	7/22/87	10/16/87	12/07/87	3/07/88	9/29/88
BENZO(K)FLUORANTHENE UG/L	<10	<5	<5	<5	
BENZOIC ACID UG/L	<50	<25	<25	<25	
BENZYL ALCOHOL UG/L	<10	<5	<5	<5	
BERYLLIUM MG/L	<0.0003	<0.0003	0.0003	<0.0003	
BERYLLIUM-F MG/L	<0.0003	<0.0003	<0.0003	<0.0003	
BETA ACTIVITY PCI/L	18.5	21.4	95	34	
BETA-BHC UG/L	<0.05	<0.05	<0.05	<0.05	
BHT UG/L			9B		
BIS(2-CHLOROETHOXY)METHANE UG/L	<10	<5	<5	<5	
BIS(2-CHLOROETHYL)ETHER UG/L	<10	<5	<5	<5	
BIS(2-CHLOROISOPROPYL)ETHER UG/L	<10	<5	<5	<5	
BIS(2-ETHYLHEXYL)PHTHALATE UG/L	<10	<5	<5	75	
BORON MG/L	0.12	0.1	0.09	0.078	
BORON-F MG/L	0.12	0.097	0.13	0.073	
BROMODICHLOROMETHANE UG/L	<5	<5	<5	<5	
BROMOFORM UG/L	<5	<5	<5	<5	

GROUNDWATER MONITORING WELL DATA

BRW-2

ANALYTE	7/22/87	10/16/87	12/07/87	3/07/88	9/29/88
BROMOMETHANE UG/L	<10	<10	<10	<10	
BUTYLBENZYLPHTHALATE UG/L	<10	<5	<5	0.8J	
CADMIUM MG/L	<0.003	<0.003	<0.003	<0.003	
CADMIUM-F MG/L	<0.003	<0.003	<0.003	<0.003	
CALCIUM MG/L	130	130	130	130	
CALCIUM-F MG/L	130	130	130	120	
CARBON DISULFIDE UG/L	<5	<5	<5	<5	
CARBON TETRACHLORIDE UG/L	<5	<5	<5	<5	
CHLORIDE MG/L	18	18	2	21	
CHLOROBENZENE UG/L	<5	<5	<5	<5	
CHLOROETHANE UG/L	<10	<10	<10	<10	
CHLOROFORM UG/L	4J	9B	3BJ	4J	
CHLOROMETHANE UG/L	<10	<10	<10	<10	
CHROMIUM MG/L	<0.01	<0.01	<0.01	<0.01	
CHROMIUM-F MG/L	<0.01	<0.01	<0.01	<0.01	
CHRYSENE UG/L	<10	<5	<5	<5	

GROUNDWATER MONITORING WELL DATA

BRW-2

ANALYTE	7/22/87	10/16/87	12/07/87	3/07/88	9/29/88
CIS-1,3-DICHLOROPROPENE UG/L	<5	<5	<5	<5	
COBALT MG/L	<0.005	<0.005	<0.005	<0.005	
COBALT-F MG/L	<0.005	<0.005	<0.005	<0.005	
CONDUCTIVITY UMHO/CM	700	610	992	750	808
	716	736	742	725	813
	732	732	731	724	805
	732	733	727	728	808
	731	739	728	729	810
CONDUCTIVITY - INIT UMHO/CM	660	670	950	750	1224
COPPER MG/L	0.0097	<0.004	<0.004	0.016	
COPPER-F MG/L	<0.004	<0.004	<0.004	0.011	
DELTA-BHC UG/L	<0.05	<0.05	<0.05	<0.05	
DEPTH FEET	27	26.4	29.7	29.6	25
DI-N-BUTYLPHTHALATE UG/L	<10	<5	<5	0.6JB	
DI-N-OCTYLPHTHALATE UG/L	<10	0.4JB	0.4JB	0.6J	
DIACETONE ALCOHOL UG/L		460B	540B	4A	
DIBENZ(A,H)ANTHRACENE UG/L	<10	<5	<5	<5	
DIBENZOFURAN UG/L	<10	<5	<5	<5	
DIBROMOCHLOROMETHANE UG/L	<5	<5	<5	<5	

GROUNDWATER MONITORING WELL DATA

BRW-2

ANALYTE	7/22/87	10/16/87	12/07/87	3/07/88	9/29/88
DIELDRIN UG/L	<0.1	<0.1	<0.1	<0.1	
DIETHYLPHTHALATE UG/L	<10	<5	<5	2J	
DIMETHYLPHTHALATE UG/L	<10	<5	<5	<5	
DISSOLVED OXYGEN PPM	3	2.2	6.4	4.8	0.7
DISSOLVED OXYGEN - INIT PPM	3.4	2	3.5	3.8	0.6
ENDOSULFAN I UG/L	<0.05	<0.05	<0.05	<0.05	
ENDOSULFAN II UG/L	<0.1	<0.1	<0.1	<0.1	
ENDOSULFAN SULFATE UG/L	<0.1	<0.1	<0.1	<0.1	
ENDRIN UG/L	<0.1	<0.1	<0.1	<0.1	
ENDRIN KETONE UG/L	<0.1	<0.1	<0.1	<0.1	
ETHYLBENZENE UG/L	<5	<5	<5	<5	
FLUORANTHENE UG/L	<10	<5	<5	<5	
FLUORENE UG/L	<10	<5	<5	<5	
FLUORIDE MG/L	0.3	0.4	0.2	0.2	
FREON 113 UG/L		37			
GAMMA-BHC (LINDANE) UG/L	<0.05	<0.05	<0.05	<0.05	

GROUNDWATER MONITORING WELL DATA

BRW-2

ANALYTE	7/22/87	10/16/87	12/07/87	3/07/88	9/29/88
HEPTACHLOR UG/L	<0.05	<0.05	<0.05	<0.05	
HEPTACHLOR EPOXIDE UG/L	<0.05	<0.05	<0.05	<0.05	
HEXACHLOROBENZENE UG/L	<10	<5	<5	<5	
HEXACHLOROBUTADIENE UG/L	<10	<5	<5	<5	
HEXACHLOROCYCLOPENTADIENE UG/L	<10	<5	<5	<5	
HEXACHLOROETHANE UG/L	<10	<5	<5	<5	
HEXAMETHYLCYCLOTRISILOXANE UG/L				3	
INDENO(1,2,3-CD)PYRENE UG/L	<10	<5	<5	<5	
IRON MG/L	0.018	0.019	<0.004	0.0056	
IRON-F MG/L	<0.004	<0.004	0.03	0.61	
ISOPHORONE UG/L	<10	<5	<5	<5	
LEAD MG/L	<0.004	<0.004	<0.004	<0.004	
LEAD-F MG/L	<0.004	0.004	<0.004	<0.004	
LITHIUM MG/L	0.016	0.02	<0.004	0.0046	
LITHIUM-F MG/L	0.018	0.019	<0.004	0.0061	
MAGNESIUM MG/L	11	12	9.7	9.4	

GROUNDWATER MONITORING WELL DATA

BRW-2

ANALYTE	7/22/87	10/16/87	12/07/87	3/07/88	9/29/88
MAGNESIUM-F MG/L	11	12	9.5	11	
MANGANESE MG/L	0.004	<0.001	<0.001	<0.001	
MANGANESE-F MG/L	0.0047	0.0057	0.0014	<0.001	
MERCURY MG/L	<0.0002	<0.0002	<0.0002	<0.0002	
MERCURY-F MG/L	<0.0002	<0.0002	<0.0002	<0.0002	
METHOXYCHLOR UG/L	<0.5	<0.5	<0.5	<0.5	
METHYLENE CHLORIDE UG/L	2JB	1BJ	<5	<5	
MOLYBDENUM MG/L	<0.01	<0.01	<0.01	<0.01	
MOLYBDENUM-F MG/L	<0.01	<0.01	<0.01	<0.01	
N-NITROSO-DI-N-PROPYLAMINE UG/L	<10	<5	<5	<5	
N-NITROSODIPHENYLAMINE UG/L	<10	<5	<5	<5	
NAPHTHALENE UG/L	<10	<5	<5	<5	
NICKEL MG/L	<0.01	<0.01	<0.01	<0.01	
NICKEL-F MG/L	<0.01	<0.01	<0.01	<0.01	
NIOBIUM MG/L	0.0072	<0.007	<0.007	<0.007	
NIOBIUM-F MG/L	0.014	<0.007	<0.007	<0.007	

GROUNDWATER MONITORING WELL DATA

BRW-2

ANALYTE	7/22/87	10/16/87	12/07/87	3/07/88	9/29/88
NITRATE-NITROGEN MG/L	0.39	0.63	0.41	0.61	
NITROBENZENE UG/L	<10	<5	<5	<5	
PCB (AROCLOR-1016) UG/L	<0.5	<0.5	<0.5	<0.5	
PCB (AROCLOR-1221) UG/L	<0.5	<0.5	<0.5	<0.5	
PCB (AROCLOR-1232) UG/L	<0.5	<0.5	<0.5	<0.5	
PCB (AROCLOR-1242) UG/L	<0.5	<0.5	<0.5	<0.5	
PCB (AROCLOR-1248) UG/L	<0.5	<0.5	<0.5	<0.5	
PCB (AROCLOR-1254) UG/L	<1	<1	<1	<1	
PCB (AROCLOR-1260) UG/L	<1	<1	<1	<1	
PENTACHLOROPHENOL UG/L	<50	<25	<25	<25	
PH	7.5	7	6.9	7.3	6.8
	7.1	6.8	7.2	6.9	6.8
	7.1	7	7.3	6.9	6.8
	7.1	6.8	7	6.9	6.8
	7.1	6.9	7.2	7	6.2
PH - INIT	6.9	6.9	6.8	7.4	7.2
PHENANTHRENE UG/L	<10	<5	<5	<5	
PHENOL UG/L	<10	<5	<5	<5	
PHENOLS MG/L	0.002	0.003	<0.001	<0.001	

GROUNDWATER MONITORING WELL DATA

BRW-2

ANALYTE	7/22/87	10/16/87	12/07/87	3/07/88	9/29/88
PHOSPHORUS MG/L	<0.2	<0.2	<0.2	<0.2	
PHOSPHORUS-F MG/L	<0.2	<0.2	<0.2	<0.2	
POTASSIUM MG/L	7.2	5.7	0.94	1.7	
POTASSIUM-F MG/L	5.1	5.7	3.8	4	
PROBABLE HYDROCARBON #1 UG/L			6B		
PROBABLE HYDROCARBON #2 UG/L			5		
PROBABLE HYDROCARBON #3 UG/L			5B		
PROBABLE HYDROCARBON #4 UG/L			5B		
PROBABLE HYDROCARBONS UG/L			24		
PYRENE UG/L	<10	<5	<5	<5	
REDOX MV	210	270	207	257	221
REDOX - INIT MV	232	314	175	263	199
SELENIUM MG/L	<0.005	<0.005	<0.005	<0.005	
SELENIUM-F MG/L	<0.005	<0.005	<0.005	<0.005	
SILICON MG/L	3.7	3.8	3.1	3.1	
SILICON-F MG/L	3.8	3.7	3.2	3.3	

GROUNDWATER MONITORING WELL DATA

BRW-2

ANALYTE	7/22/87	10/16/87	12/07/87	3/07/88	9/29/88
SILVER MG/L	<0.006	<0.006	<0.006	<0.006	
SILVER-F MG/L	<0.006	<0.006	<0.006	<0.006	
SODIUM MG/L	16	15	17	14	
SODIUM-F MG/L	17	15	16	15	
STRONTIUM MG/L	0.2	0.16	0.13	0.13	
STRONTIUM-F MG/L	0.18	0.15	0.13	0.14	
STYRENE UG/L	<5	<5	<5	<5	
SULFATE MG/L	35	42	49	50	
T. CHLORDANE UG/L	<0.5	<0.5	<0.5	<0.5	
TEMPERATURE DEG C	20.9	16.3	16.3	18.4	17.7
TEMPERATURE - INIT DEG C	21.1	17	14.7	17.4	19.5
TETRACHLOROETHENE UG/L	<5	2J	<5	<5	
THALLIUM MG/L	<0.01	<0.01	<0.01	<0.01	
THALLIUM-F MG/L	<0.01	<0.01	<0.01	<0.01	
THORIUM MG/L	<0.2	<0.2	<0.2	<0.2	
THORIUM-F MG/L	<0.2	<0.2	<0.2	<0.2	

GROUNDWATER MONITORING WELL DATA

BRW-2

ANALYTE	7/22/87	10/16/87	12/07/87	3/07/88	9/29/88
TITANIUM MG/L	<0.003	0.004	0.0047	<0.003	
TITANIUM-F MG/L	<0.003	0.004	<0.003	<0.003	
TOC MG/L	1.2	2.3	2	1.6	3
	1.4	2.3	1.7	1.8	3
	1.3	2.5	2	1.8	4
	1.4	1.8	1.6	1.9	3
TOLUENE UG/L	1JB	1BJ	<5	<5	
TOTAL COLIFORM BACTERIA COL/100ML	1	7	3	8	
TOTAL XYLENES UG/L	<5	<5	<5	<5	
TOX UG/L	57	115	45	88	111
	67	101	67	72	107
	87	100	64	56	77
	80	107	74	71	93
TOXAPHENE UG/L	<1	<1	<1	<1	
TRANS-1,2-DICHLOROETHENE UG/L	<5	<5	<5	<5	
TRANS-1,3-DICHLOROPROPENE UG/L	<5	<5	<5	<5	
TRICHLOROETHENE UG/L	0.9J	<5	51	<5	
TURBIDITY NTU	23	3	0.6	0.4	
U-235 WT.%	0.97	0.97	0.94		
UNKNOWN ALDOL-CONDENSATION PRO UG/L				12A	
UNKNOWN FREON UG/L		32			

GROUNDWATER MONITORING WELL DATA

BRW-2

ANALYTE	7/22/87	10/16/87	12/07/87	3/07/88	9/29/88
UNKNOWNS UG/L		180	27	12	
URANIUM MG/L	0.031	0.022	0.018	0.023	
URANIUM-F MG/L	0.03	0.022	0.025	0.016	
VANADIUM MG/L	<0.005	<0.005	<0.005	<0.005	
VANADIUM-F MG/L	<0.005	<0.005	<0.005	<0.005	
VINYL ACETATE UG/L	<10	<10	<10	<10	
VINYL CHLORIDE UG/L	<10	<10	<10	<10	
ZINC MG/L	0.0025	0.0068	<0.001	<0.001	
ZINC-F MG/L	0.0026	0.0037	0.005	<0.001	
ZIRCONIUM MG/L	<0.005	<0.005	<0.005	<0.005	
ZIRCONIUM-F MG/L	<0.005	<0.005	<0.005	<0.005	

GROUNDWATER MONITORING WELL DATA

BRW-3

ANALYTE	7/22/87	10/19/87	12/08/87	3/07/88	9/29/88
1,1,1-TRICHLOROETHANE UG/L	38	31	35B	18 19	
1,1,2,2-TETRACHLOROETHANE UG/L	<5	<5	<5	<5 <5	
1,1,2-TRICHLOROETHANE UG/L	2J	22	<5	<5 <5	
1,1-DICHLOROETHANE UG/L	17	18	17B	16 16	
1,1-DICHLOROETHENE UG/L	11	12	13	8 9	
1,2,4-TRICHLOROBENZENE UG/L	<10	<5	<5	<5 <5	
1,2-DICHLOROBENZENE UG/L	<10	<5	<5	<5 <5	
1,2-DICHLOROETHANE UG/L	<5	<5	<5	<5 <5	
1,2-DICHLOROPROPANE UG/L	<5	<5	<5	<5 <5	
1,3-DICHLOROBENZENE UG/L	<10	<5	<5	<5 <5	
1,4-DICHLOROBENZENE UG/L	<10	<5	<5	<5 <5	
2,4,5-T UG/L	<0.1	<0.1	<0.1	<0.1 <0.1	
2,4,5-TP (SILVEX) UG/L	<0.1	<0.1	<0.1	<0.1 <0.1	
2,4,5-TRICHLOROPHENOL UG/L	<50	<25	<25	<25 <25	
2,4,6-TRICHLOROPHENOL UG/L	<10	<5	<5	<5 <5	
2,4-D UG/L	<1	<1	<1	<1 <1	

GROUNDWATER MONITORING WELL DATA

BRW-3

ANALYTE	7/22/87	10/19/87	12/08/87	3/07/88	9/29/88
2,4-DICHLOROPHENOL	<10	<5	<5	<5	
UG/L				<5	
2,4-DIMETHYLPHENOL	<10	<5	<5	<5	
UG/L				<5	
2,4-DINITROPHENOL	<50	<25	<25	<25	
UG/L				<25	
2,4-DINITROTOLUENE	<10	<5	<5	<5	
UG/L				<5	
2,6-DINITROTOLUENE	<10	<5	<5	<5	
UG/L				<5	
2-BUTANONE	7JB	<10	<10	<10	
UG/L				<10	
2-CHLOROETHYLVINYL ETHER	<10	<10	<10	<10	
UG/L				<10	
2-CHLORONAPHTHALENE	<10	<5	<5	<5	
UG/L				<5	
2-CHLOROPHENOL	<10	<5	<5	<5	
UG/L				<5	
2-HEXANONE	<10	<10	<10	<10	
UG/L				<10	
2-METHYLNAPHTHALENE	<10	<5	<5	<5	
UG/L				<5	
2-METHYLPHENOL	<10	<5	<5	<5	
UG/L				<5	
2-NITROANILINE	<50	<25	<25	<25	
UG/L				<25	
2-NITROPHENOL	<10	<5	<5	<5	
UG/L				<5	
3,3-DICHLOROBENZIDINE	<20	<10	<10	<10	
UG/L				<10	
3-NITROANILINE	<50	<25	<25	<25	
UG/L				<25	

GROUNDWATER MONITORING WELL DATA

BRW-3

ANALYTE	7/22/87	10/19/87	12/08/87	3/07/88	9/29/88
4,4-DDD	<0.1	<0.1	<0.1	<0.5	
UG/L				<0.5	
4,4-DDE	<0.1	<0.1	<0.1	<0.5	
UG/L				<0.5	
4,4-DDT	<0.1	<0.1	<0.1	<0.5	
UG/L				<0.5	
4,6-DINITRO-2-METHYLPHENOL	<50	<25	<25	<25	
UG/L				<25	
4-BROMOPHENYL-PHENYLETHER	<10	<5	<5	<5	
UG/L				<5	
4-CHLORO-3-METHYLPHENOL	<10	<5	<5	<5	
UG/L				<5	
4-CHLOROANILINE	<10	<5	<5	<5	
UG/L				<5	
4-CHLOROPHENYL-PHENYLETHER	<10	<5	<5	<5	
UG/L				<5	
4-METHYL-2-PENTANONE	<10	<10	<10	<10	
UG/L				<10	
4-METHYLPHENOL	<10	<5	<5	<5	
UG/L				<5	
4-NITROANILINE	<50	<25	<25	<25	
UG/L				<25	
4-NITROPHENOL	<50	<25	<25	<25	
UG/L				<25	
ACENAPHTHENE	<10	<5	<5	<5	
UG/L				<5	
ACENAPHTHYLENE	<10	<5	<5	<5	
UG/L				<5	
ACETONE	<10	5BJ	<10	<10	
UG/L				<10	
ALDRIN	<0.05	<0.05	<0.05	<0.25	
UG/L				<0.25	

GROUNDWATER MONITORING WELL DATA

BRW-3

ANALYTE	7/22/87	10/19/87	12/08/87	3/07/88	9/29/88
ALPHA ACTIVITY PCI/L	25.1	5.8	17	64 56	
ALPHA-BHC UG/L	<0.05	<0.05	<0.05	<0.25 <0.25	
ALUMINUM MG/L	0.12	0.16	0.76	0.069 0.039	
ALUMINUM-F MG/L	0.072	<0.02	0.04	0.029 <0.02	
ANTHRACENE UG/L	<10	<5	<5	<5 <5	
ANTIMONY MG/L	0.055	<0.05	0.075	<0.05 <0.05	
ANTIMONY-F MG/L	<0.05	<0.05	<0.05	<0.05 <0.05	
ARSENIC MG/L	0.025	<0.005	0.042	0.032 0.031	
ARSENIC-F MG/L	0.024	<0.005	0.042	0.033 0.032	
BARIUM MG/L	0.13	0.063	0.15	0.07 0.068	
BARIUM-F MG/L	0.076	0.063	0.079	0.068 0.067	
BENZENE UG/L	<5	<5	<5	<5 <5	
BENZO(A)ANTHRACENE UG/L	<10	<5	<5	<5 <5	
BENZO(A)PYRENE UG/L	<10	<5	<5	<5 <5	
BENZO(B)FLUORANTHENE UG/L	<10	<5	<5	<5 <5	
BENZO(G,H,I)PERYLENE UG/L	<10	<5	<5	<5 <5	

GROUNDWATER MONITORING WELL DATA

BRW-3

ANALYTE	7/22/87	10/19/87	12/08/87	3/07/88	9/29/88
BENZO(K)FLUORANTHENE	<10	<5	<5	<5	
UG/L				<5	
BENZOIC ACID	<50	<25	<25	<25	
UG/L				<25	
BENZYL ALCOHOL	<10	<5	<5	<5	
UG/L				<5	
BERYLLIUM	0.0003	<0.0003	0.0006	<0.0003	
MG/L				<0.0003	
BERYLLIUM-F	<0.0003	<0.0003	<0.0003	<0.0003	
MG/L				<0.0003	
BETA ACTIVITY	36	56.7	74	178	
PCI/L				164	
BETA-BHC	<0.05	<0.05	<0.05	<0.25	
UG/L				<0.25	
BHT			9		
UG/L					
BIS(2-CHLOROETHOXY)METHANE	<10	<5	<5	<5	
UG/L				<5	
BIS(2-CHLOROETHYL)ETHER	<10	<5	<5	<5	
UG/L				<5	
BIS(2-CHLOROISOPROPYL)ETHER	<10	<5	<5	<5	
UG/L				<5	
BIS(2-ETHYLHEXYL)PHTHALATE	<10	2J	<5	2J	
UG/L				2J	
BORON	0.13	0.12	0.15	0.11	
MG/L				0.098	
BORON-F	0.12	0.12	0.12	0.1	
MG/L				0.12	
BROMODICHLOROMETHANE	<5	<5	<5	<5	
UG/L				<5	
BROMOFORM	<5	<5	<5	<5	
UG/L				<5	

GROUNDWATER MONITORING WELL DATA

BRW-3

ANALYTE	7/22/87	10/19/87	12/08/87	3/07/88	9/29/88
BROMOMETHANE UG/L	<10	<10	<10	<10 <10	
BUTYLBENZYLPHTHALATE UG/L	<10	<5	<5	<5 <5	
CADMIUM MG/L	<0.003	<0.003	<0.003	<0.003 <0.003	
CADMIUM-F MG/L	<0.003	<0.003	<0.003	<0.003 <0.003	
CALCIUM MG/L	150	140	130	130 130	
CALCIUM-F MG/L	150	130	130	130 130	
CARBON DISULFIDE UG/L	<5	<5	<5	<5 <5	
CARBON TETRACHLORIDE UG/L	<5	<5	<5	<5 <5	
CHLORIDE MG/L	25	23	23	22 24	
CHLOROBENZENE UG/L	<5	<5	<5	<5 <5	
CHLOROETHANE UG/L	<10	<10	<10	<10 <10	
CHLOROFORM UG/L	1J	4BJ	1BJ	2BJ <5	
CHLOROMETHANE UG/L	<10	<10	<10	<10 <10	
CHROMIUM MG/L	<0.01	<0.01	0.018	<0.01 <0.01	
CHROMIUM-F MG/L	<0.01	<0.01	0.014	<0.01 <0.01	
CHRYSENE UG/L	<10	<5	<5	<5 <5	

GROUNDWATER MONITORING WELL DATA

BRW-3

ANALYTE	7/22/87	10/19/87	12/08/87	3/07/88	9/29/88
CIS-1,3-DICHLOROPROPENE	<5	<5	<5	<5	
UG/L				<5	
COBALT	<0.005	<0.005	<0.005	<0.005	
MG/L				<0.005	
COBALT-F	<0.005	<0.005	<0.005	<0.005	
MG/L				<0.005	
CONDUCTIVITY	760	730	640	740	813
UMHO/CM	835	839	783	752	840
	835	836	781	750	809
	833	837	777	758	814
	835	839	769	760	810
				750	
				762	
				760	
				760	
				768	
CONDUCTIVITY - INIT	810	740	680	790	873
UMHO/CM				750	
COPPER	<0.004	<0.004	<0.004	<0.004	
MG/L				<0.004	
COPPER-F	<0.004	<0.004	0.013	<0.004	
MG/L				0.023	
DELTA-BHC	<0.05	<0.05	<0.05	<0.25	
UG/L				<0.25	
DEPTH	24.8	24.1	27.6	27.4	23
FEET				27.4	
DI-N-BUTYLPHTHALATE	<10	<5	<5	<5	
UG/L				<5	
DI-N-OCTYLPHTHALATE	<10	<5	0.4J	0.5JB	
UG/L				<5	
DIACETONE ALCOHOL		380B	600		
UG/L					
DIBENZ(A,H)ANTHRACENE	<10	<5	<5	<5	
UG/L				<5	

GROUNDWATER MONITORING WELL DATA

BRW-3

ANALYTE	7/22/87	10/19/87	12/08/87	3/07/88	9/29/88
DIBENZOFURAN	<10	<5	<5	<5	
UG/L				<5	
DIBROMOCHLOROMETHANE	<5	<5	<5	<5	
UG/L				<5	
DIELDRIN	<0.1	<0.1	<0.1	<0.5	
UG/L				<0.5	
DIETHYLPHTHALATE	<10	<5	<5	<5	
UG/L				<5	
DIMETHYLPHTHALATE	<10	<5	<5	<5	
UG/L				<5	
DISSOLVED OXYGEN	0.6	2.1	4.3	3.9	0.5
PPM				8.3	
DISSOLVED OXYGEN - INIT	1.9	5.3	5.4	4.2	1
PPM				7.8	
ENDOSULFAN I	<0.05	<0.05	<0.05	<0.25	
UG/L				<0.25	
ENDOSULFAN II	<0.1	<0.1	<0.1	<0.5	
UG/L				<0.5	
ENDOSULFAN SULFATE	<0.1	<0.1	<0.1	<0.5	
UG/L				<0.5	
ENDRIN	<0.1	<0.1	<0.1	<0.5	
UG/L				<0.5	
ENDRIN KETONE	<0.1	<0.1	<0.1	<0.5	
UG/L				<0.5	
ETHYLBENZENE	<5	<5	<5	<5	
UG/L				<5	
FLUORANTHENE	<10	<5	<5	<5	
UG/L				<5	
FLUORENE	<10	<5	<5	<5	
UG/L				<5	
FLUORIDE	0.2	0.3	0.3	0.2	
MG/L				0.3	

GROUNDWATER MONITORING WELL DATA

BRW-3

ANALYTE	7/22/87	10/19/87	12/08/87	3/07/88	9/29/88
FREON 113		7		13	
UG/L				16	
GAMMA-BHC (LINDANE)	<0.05	<0.05	<0.05	<0.25	
UG/L				<0.25	
HEPTACHLOR	<0.05	<0.05	<0.05	<0.25	
UG/L				<0.25	
HEPTACHLOR EPOXIDE	<0.05	<0.05	<0.05	<0.25	
UG/L				<0.25	
HEXACHLOROBENZENE	<10	<5	<5	<5	
UG/L				<5	
HEXACHLOROBUTADIENE	<10	<5	<5	<5	
UG/L				<5	
HEXACHLOROCYCLOPENTADIENE	<10	<5	<5	<5	
UG/L				<5	
HEXACHLOROETHANE	<10	<5	<5	<5	
UG/L				<5	
HEXAMETHYLCYCLOTRISILOXANE				2	
UG/L					
INDENO(1,2,3-CD)PYRENE	<10	<5	<5	<5	
UG/L				<5	
IRON	0.042	0.1	0.65	0.083	
MG/L				0.047	
IRON-F	<0.004	<0.004	<0.004	0.01	
MG/L				0.0078	
ISOPHORONE	<10	<5	<5	<5	
UG/L				<5	
LEAD	<0.004	0.004	0.004	0.006	
MG/L				0.006	
LEAD-F	0.006	<0.004	0.004	0.009	
MG/L				0.01	
LITHIUM	0.0048	0.007	0.014	0.0075	
MG/L				0.0063	

GROUNDWATER MONITORING WELL DATA

BRW-3

ANALYTE	7/22/87	10/19/87	12/08/87	3/07/88	9/29/88
LITHIUM-F MG/L	0.0044	0.0063	0.0098	0.0063 0.0057	
MAGNESIUM MG/L	17	16	15	16 16	
MAGNESIUM-F MG/L	16	16	15	16 14	
MANGANESE MG/L	0.02	0.025	0.028	0.0082 0.0092	
MANGANESE-F MG/L	0.011	0.017	0.013	0.0061 0.0055	
MERCURY MG/L	<0.0002	<0.0002	<0.0002	<0.0002 <0.0002	
MERCURY-F MG/L	<0.0002	<0.0002	<0.0002	<0.0002 <0.0002	
METHOXYCHLOR UG/L	<0.5	<0.5	<0.5	<2.5 <2.5	
METHYLENE CHLORIDE UG/L	2JB	<5	<5	<5 <5	
MOLYBDENUM MG/L	0.013	<0.01	<0.01	<0.01 <0.01	
MOLYBDENUM-F MG/L	<0.01	<0.01	<0.01	<0.01 <0.01	
N-NITROSO-DI-N-PROPYLAMINE UG/L	<10	<5	<5	<5 <5	
N-NITROSODIPHENYLAMINE UG/L	<10	<5	<5	<5 <5	
NAPHTHALENE UG/L	<10	<5	<5	<5 <5	
NICKEL MG/L	<0.01	<0.01	<0.01	<0.01 <0.01	
NICKEL-F MG/L	<0.01	<0.01	<0.01	<0.01 <0.01	

GROUNDWATER MONITORING WELL DATA

BRW-3

ANALYTE	7/22/87	10/19/87	12/08/87	3/07/88	9/29/88
NIOBIUM	0.015	<0.007	0.0074	<0.007	
MG/L				<0.007	
NIOBIUM-F	0.015	<0.007	<0.007	<0.007	
MG/L				<0.007	
NITRATE-NITROGEN	0.62	0.53	0.41	0.52	
MG/L				0.52	
NITROBENZENE	<10	<5	<5	<5	
UG/L				<5	
PCB (AROCLOR-1016)	<0.5	<0.5	<0.5	<2.5	
UG/L				<2.5	
PCB (AROCLOR-1221)	<0.5	<0.5	<0.5	<2.5	
UG/L				<2.5	
PCB (AROCLOR-1232)	<0.5	<0.5	<0.5	<2.5	
UG/L				<2.5	
PCB (AROCLOR-1242)	<0.5	<0.5	<0.5	<2.5	
UG/L				<2.5	
PCB (AROCLOR-1248)	<0.5	<0.5	<0.5	<2.5	
UG/L				<2.5	
PCB (AROCLOR-1254)	<1	<1	4.9	<5	
UG/L				<5	
PCB (AROCLOR-1260)	<1	<1	<1	<5	
UG/L				<5	
PENTACHLOROPHENOL	<50	<25	<25	<25	
UG/L				<25	
PH	6.9	7.7	7.8	5	6.9
	7.1	6.9	7	6.9	6.9
	7	7	7	6.9	6.9
	7.1	7	7	6.9	6.9
	7	7	7	6.9	6.9
				7.2	
				6.8	
				6.8	
				6.8	
				6.8	
PH - INIT	6.1	8.6	7.7	6	6.9

GROUNDWATER MONITORING WELL DATA

BRW-3

ANALYTE	7/22/87	10/19/87	12/08/87	3/07/88	9/29/88
PHENANTHRENE	<10	<5	<5	<5	
UG/L				<5	
PHENOL	<10	<5	<5	<5	
UG/L				<5	
PHENOLS	0.002	0.002	<0.001	<0.001	
MG/L				<0.001	
PHOSPHORUS	<0.2	<0.2	<0.2	<0.2	
MG/L				<0.2	
PHOSPHORUS-F	<0.2	<0.2	<0.2	<0.2	
MG/L				<0.2	
POTASSIUM	3.4	4.1	8.8	8.1	
MG/L				7.8	
POTASSIUM-F	3.2	3.3	7.1	7.5	
MG/L				5.1	
PROBABLE CIS-1,2-DICHLOROTHENE			8		
UG/L					
PROBABLE FREON 123				5	
UG/L					
PROBABLE HYDROCARBON #1			5B		
UG/L					
PROBABLE HYDROCARBON #2			4B		
UG/L					
PROBABLE HYDROCARBON #3			7B		
UG/L					
PROBABLE HYDROCARBON #4			10B		
UG/L					
PROBABLE HYDROCARBONS			40		
UG/L					
PROMETON			2		
UG/L					
PYRENE	<10	<5	<5	<5	
UG/L				<5	

GROUNDWATER MONITORING WELL DATA

BRW-3

ANALYTE	7/22/87	10/19/87	12/08/87	3/07/88	9/29/88
REDOX	199	299	271	362	242
MV				364	
REDOX - INIT	174	191	270	312	263
MV				357	
SELENIUM	<0.005	<0.005	<0.005	<0.005	
MG/L				<0.005	
SELENIUM-F	<0.005	<0.005	<0.005	<0.005	
MG/L				≤0.005	
SILICON	4.9	5	5.9	4.9	
MG/L				3.5	
SILICON-F	4.8	4.7	4.6	4.5	
MG/L				4.5	
SILVER	<0.006	<0.006	<0.006	<0.006	
MG/L				<0.006	
SILVER-F	<0.006	<0.006	<0.006	<0.006	
MG/L				<0.006	
SODIUM	18	17	15	17	
MG/L				17	
SODIUM-F	18	17	16	16	
MG/L				16	
STRONTIUM	0.12	0.095	0.092	0.093	
MG/L				0.092	
STRONTIUM-F	0.12	0.096	0.088	0.092	
MG/L				0.087	
STYRENE	<5	<5	<5	<5	
UG/L				<5	
SULFATE	53	50	48	59	
MG/L				59	
T. CHLORDANE	<0.5	<0.5	<0.5	<2.5	
UG/L				<2.5	
TECHNETIUM-99				505	
PCI/L				613	

GROUNDWATER MONITORING WELL DATA

BRW-3

ANALYTE	7/22/87	10/19/87	12/08/87	3/07/88	9/29/88
TEMPERATURE	16	21.6	17.9	17.3	19.8
DEG C				17.8	
TEMPERATURE - INIT	16	20.4	19.4	16.2	20.6
DEG C				17.1	
TETRACHLOROETHENE	<5	1J	<5	<5	
UG/L				<5	
THALLIUM	<0.01	<0.01	<0.01	<0.01	
MG/L				<0.01	
THALLIUM-F	<0.01	<0.01	<0.01	<0.01	
MG/L				<0.01	
THORIUM	<0.2	<0.2	<0.2	<0.2	
MG/L				<0.2	
THORIUM-234				11	
PCI/L				14	
THORIUM-F	<0.2	<0.2	<0.2	<0.2	
MG/L				<0.2	
TITANIUM	<0.003	0.0045	0.026	<0.003	
MG/L				<0.003	
TITANIUM-F	<0.003	0.0037	0.0045	<0.003	
MG/L				<0.003	
TOC	1.9	3.7	1.6	2.9	3
MG/L	2.2	9.2	1.6	3	4
	2.1	2.4	1.6	2.8	3
	2.5	2.6	1.6	2.8	4
				2.8	
				3.1	
				3	
				2.9	
TOLUENE	1JB	<5	<5	<5	
UG/L				<5	
TOTAL COLIFORM BACTERIA	13	3	1	<1	
COL/100ML				<1	
TOTAL XYLENES	<5	<5	<5	<5	
UG/L				<5	

GROUNDWATER MONITORING WELL DATA

BRW-3

ANALYTE	7/22/87	10/19/87	12/08/87	3/07/88	9/29/88
TOX	49	93	131	118	68
UG/L	76	81	74	91	58
	78	73	73	83	62
	68	74	88	81	69
				112	
				96	
				56	
				76	
TOXAPHENE	<1	<1	<1	<5	
UG/L				<5	
TRANS-1,2-DICHLOROETHENE	18	11	<5	10	
UG/L				10	
TRANS-1,3-DICHLOROPROPENE	<5	<5	<5	<5	
UG/L				<5	
TRICHLOROETHENE	19	21	16B	16	
UG/L				18	
TURBIDITY	1.5	10.6	9.8	1	
NTU				1	
U-235	1.1	1.07	1.07	1.04	
WT.%					
UNKNOWN FREON		74			
UG/L					
UNKNOWNS		40	52	9	
UG/L				18	
URANIUM	0.032	0.021	0.029	0.024	
MG/L				0.023	
URANIUM-F	0.036	0.024	0.025	0.023	
MG/L				0.027	
VANADIUM	<0.005	<0.005	<0.005	<0.005	
MG/L				<0.005	
VANADIUM-F	<0.005	<0.005	<0.005	<0.005	
MG/L				<0.005	
VINYL ACETATE	<10	<10	<10	<10	
UG/L				<10	

GROUNDWATER MONITORING WELL DATA

BRW-3

ANALYTE	7/22/87	10/19/87	12/08/87	3/07/88	9/29/88
VINYL CHLORIDE	<10	<10	<10	<10	
UG/L				<10	
ZINC	0.0025	0.017	0.01	<0.001	
MG/L				<0.001	
ZINC-F	0.0024	0.017	0.035	<0.001	
MG/L				0.0015	
ZIRCONIUM	<0.005	<0.005	0.007	<0.005	
MG/L				<0.005	
ZIRCONIUM-F	<0.005	<0.005	<0.005	<0.005	
MG/L				<0.005	

GROUNDWATER WELL MONITORING DATA

BRW-4

ANALYTE	7/23/87
1,1,1-TRICHLOROETHANE UG/L	<5
1,1,2,2-TETRACHLOROETHANE UG/L	<5
1,1,2-TRICHLOROETHANE UG/L	<5
1,1-DICHLOROETHANE UG/L	<5
1,1-DICHLOROETHENE UG/L	<5
1,2,4-TRICHLOROBENZENE UG/L	<10
1,2-DICHLOROBENZENE UG/L	<10
1,2-DICHLOROETHANE UG/L	<5
1,2-DICHLOROPROPANE UG/L	<5
1,3-DICHLOROBENZENE UG/L	<10
1,4-DICHLOROBENZENE UG/L	<10
2,4,5-TRICHLOROPHENOL UG/L	<50
2,4,6-TRICHLOROPHENOL UG/L	<10
2,4-DICHLOROPHENOL UG/L	<10
2,4-DIMETHYLPHENOL UG/L	<10
2,4-DINITROPHENOL UG/L	<50

GROUNDWATER WELL MONITORING DATA

BRW-4

ANALYTE	7/23/87
2,4-DINITROTOLUENE UG/L	<10
2,6-DINITROTOLUENE UG/L	<10
2-BUTANONE UG/L	<10
2-CHLOROETHYLVINYL ETHER UG/L	<10
2-CHLORONAPHTHALENE UG/L	<10
2-CHLOROPHENOL UG/L	<10
2-HEXANONE UG/L	<10
2-METHYLNAPHTHALENE UG/L	<10
2-METHYLPHENOL UG/L	<10
2-NITROANILINE UG/L	<50
2-NITROPHENOL UG/L	<10
3,3-DICHLOROBENZIDINE UG/L	<20
3-NITROANILINE UG/L	<50
4,4-DDD UG/L	<0.1
4,4-DDE UG/L	<0.1
4,4-DDT UG/L	<0.1

GROUNDWATER WELL MONITORING DATA

BRW-4

ANALYTE	7/23/87
4,6-DINITRO-2-METHYLPHENOL UG/L	<50
4-BROMOPHENYL-PHENYLETHER UG/L	<10
4-CHLORO-3-METHYLPHENOL UG/L	<10
4-CHLOROANILINE UG/L	<10
4-CHLOROPHENYL-PHENYLETHER UG/L	<10
4-METHYL-2-PENTANONE UG/L	<10
4-METHYLPHENOL UG/L	<10
4-NITROANILINE UG/L	<50
4-NITROPHENOL UG/L	<50
ACENAPHTHENE UG/L	<10
ACENAPHTHYLENE UG/L	<10
ACETONE UG/L	<10
ALDRIN UG/L	<0.05
ALPHA-BHC UG/L	<0.05
ANTHRACENE UG/L	<10
BENZENE UG/L	<5

GROUNDWATER WELL MONITORING DATA

BRW-4

ANALYTE	7/23/87
BENZO(A)ANTHRACENE UG/L	<10
BENZO(A)PYRENE UG/L	<10
BENZO(B)FLUORANTHENE UG/L	<10
BENZO(G,H,I)PERYLENE UG/L	<10
BENZO(K)FLUORANTHENE UG/L	<10
BENZOIC ACID UG/L	<50
BENZYL ALCOHOL UG/L	<10
BETA-BHC UG/L	<0.05
BIS(2-CHLOROETHOXY)METHANE UG/L	<10
BIS(2-CHLOROETHYL)ETHER UG/L	<10
BIS(2-CHLOROISOPROPYL)ETHER UG/L	<10
BIS(2-ETHYLHEXYL)PHTHALATE UG/L	3J
BROMODICHLOROMETHANE UG/L	<5
BROMOFORM UG/L	<5
BROMOMETHANE UG/L	<10
BUTYLBENZYLPHTHALATE UG/L	<10

GROUNDWATER WELL MONITORING DATA

BRW-4

ANALYTE	7/23/87
CARBON DISULFIDE UG/L	<5
CARBON TETRACHLORIDE UG/L	<5
CHLOROBENZENE UG/L	<5
CHLOROETHANE UG/L	<10
CHLOROFORM UG/L	7B
CHLOROMETHANE UG/L	<10
CHRYSENE UG/L	<10
CIS-1,3-DICHLOROPROPENE UG/L	<5
CONDUCTIVITY UMHO/CM	690
CONDUCTIVITY - INIT UMHO/CM	610
DELTA-BHC UG/L	<0.05
DEPTH FEET	70.3
DI-N-BUTYLPHTHALATE UG/L	<10
DI-N-OCTYLPHTHALATE UG/L	<10
DIBENZ(A,H)ANTHRACENE UG/L	<10
DIBENZOFURAN UG/L	<10

GROUNDWATER WELL MONITORING DATA

BRW-4

ANALYTE	7/23/87
DIBROMOCHLOROMETHANE UG/L	<5
DIELDRIN UG/L	<0.1
DIETHYLPHTHALATE UG/L	<10
DIMETHYLPHTHALATE UG/L	<10
DISSOLVED OXYGEN PPM	2.4
DISSOLVED OXYGEN - INIT PPM	3.2
ENDOSULFAN I UG/L	<0.05
ENDOSULFAN II UG/L	<0.1
ENDOSULFAN SULFATE UG/L	<0.1
ENDRIN UG/L	<0.1
ENDRIN KETONE UG/L	<0.1
ETHYLBENZENE UG/L	<5
FLUORANTHENE UG/L	<10
FLUORENE UG/L	<10
GAMMA-BHC (LINDANE) UG/L	<0.05
HEPTACHLOR UG/L	<0.05

GROUNDWATER WELL MONITORING DATA

BRW-4

ANALYTE	7/23/87
HEPTACHLOR EPOXIDE UG/L	<0.05
HEXACHLOROBENZENE UG/L	<10
HEXACHLOROBUTADIENE UG/L	<10
HEXACHLOROCYCLOPENTADIENE UG/L	<10
HEXACHLOROETHANE UG/L	<10
INDENO(1,2,3-CD)PYRENE UG/L	<10
ISOPHORONE UG/L	<10
METHOXYCHLOR UG/L	<0.5
METHYLENE CHLORIDE UG/L	<5
N-NITROSO-DI-N-PROPYLAMINE UG/L	<10
N-NITROSODIPHENYLAMINE UG/L	<10
NAPHTHALENE UG/L	<10
NITROBENZENE UG/L	<10
PCB (AROCLOR-1016) UG/L	<0.5
PCB (AROCLOR-1221) UG/L	<0.5
PCB (AROCLOR-1232) UG/L	<0.5

GROUNDWATER WELL MONITORING DATA

BRW-4

ANALYTE	7/23/87
PCB (AROCLOR-1242) UG/L	<0.5
PCB (AROCLOR-1248) UG/L	<0.5
PCB (AROCLOR-1254) UG/L	<1
PCB (AROCLOR-1260) UG/L	<1
PENTACHLOROPHENOL UG/L	<50
PH	8.4
PH - INIT	7.9
PHENANTHRENE UG/L	<10
PHENOL UG/L	<10
PHENOLS MG/L	0.003
PYRENE UG/L	<10
REDOX MV	202
REDOX - INIT MV	165
STYRENE UG/L	<5
T. CHLORDANE UG/L	<0.5
TEMPERATURE DEG C	23.7

GROUNDWATER WELL MONITORING DATA

BRW-4

ANALYTE	7/23/87
TEMPERATURE - INIT DEG C	18
TETRACHLOROETHENE UG/L	<5
TOC MG/L	2.6
TOLUENE UG/L	2BJ
TOTAL COLIFORM BACTERIA COL/100ML	0
TOTAL XYLENES UG/L	<5
TOX UG/L	31
TOXAPHENE UG/L	<1
TRANS-1,2-DICHLOROETHENE UG/L	<5
TRANS-1,3-DICHLOROPROPENE UG/L	<5
TRICHLOROETHENE UG/L	<5
VINYL ACETATE UG/L	<10
VINYL CHLORIDE UG/L	<10

GROUNDWATER MONITORING WELL DATA

BRW-17

ANALYTE	7/20/87	10/20/87	12/08/87	3/07/88	9/29/88
1,1,1-TRICHLOROETHANE	2J	<5	<5	<5	
UG/L			<5		
1,1,2,2-TETRACHLOROETHANE	<5	<5	<5	<5	
UG/L			<5		
1,1,2-TRICHLOROETHANE	<5	<5	<5	<5	
UG/L			<5		
1,1-DICHLOROETHANE	<5	<5	<5	<5	
UG/L			<5		
1,1-DICHLOROETHENE	1J	<5	<5	<5	
UG/L			<5		
1,2,4-TRICHLOROBENZENE	<10	<5	<5	<5	
UG/L			<5		
1,2-DICHLOROBENZENE	<10	<5	<5	<5	
UG/L			<5		
1,2-DICHLOROETHANE	<5	<5	<5	<5	
UG/L			<5		
1,2-DICHLOROPROPANE	<5	<5	<5	<5	
UG/L			<5		
1,3-DICHLOROBENZENE	<10	<5	<5	<5	
UG/L			<5		
1,4-DICHLOROBENZENE	<10	<5	<5	<5	
UG/L			<5		
2,4,5-T	<0.1	<0.1	<0.1	<0.1	
UG/L			<0.1		
2,4,5-TP (SILVEX)	<0.1	<0.1	<0.1	<0.1	
UG/L			<0.1		
2,4,5-TRICHLOROPHENOL	<50	<25	<25	<25	
UG/L			<25		
2,4,6-TRICHLOROPHENOL	<10	<5	<5	<5	
UG/L			<5		
2,4-D	<1	<1	<1	<1	
UG/L			<1		

GROUNDWATER MONITORING WELL DATA

BRW-17

ANALYTE	7/20/87	10/20/87	12/08/87	3/07/88	9/29/88
2,4-DICHLOROPHENOL	<10	<5	<5	<5	
UG/L			<5		
2,4-DIMETHYLPHENOL	<10	<5	<5	<5	
UG/L			<5		
2,4-DINITROPHENOL	<50	<25	<25	<25	
UG/L			<25		
2,4-DINITROTOLUENE	<10	<5	<5	<5	
UG/L			<5		
2,6-DINITROTOLUENE	<10	<5	<5	<5	
UG/L			<5		
2-BUTANONE	7JB	<10	<10	<10	
UG/L			<10		
2-CHLOROETHYLVINYL ETHER	<10	<10	<10	<10	
UG/L			<10		
2-CHLORONAPHTHALENE	<10	<5	<5	<5	
UG/L			<5		
2-CHLOROPHENOL	<10	<5	<5	<5	
UG/L			<5		
2-HEXANONE	<10	<10	<10	<10	
UG/L			<10		
2-METHYLNAPHTHALENE	<10	<5	<5	<5	
UG/L			<5		
2-METHYLPHENOL	<10	<5	<5	<5	
UG/L			<5		
2-NITROANILINE	<50	<25	<25	<25	
UG/L			<25		
2-NITROPHENOL	<10	<5	<5	<5	
UG/L			<5		
3,3-DICHLOROBENZIDINE	<20	<10	<10	<10	
UG/L			<10		
3-NITROANILINE	<50	<25	<25	<25	
UG/L			<25		

GROUNDWATER MONITORING WELL DATA

BRW-17

ANALYTE	7/20/87	10/20/87	12/08/87	3/07/88	9/29/88
4,4-DDD	<0.1	<0.1	<0.1	<0.5	
UG/L			<0.1		
4,4-DDE	<0.1	<0.1	<0.1	<0.5	
UG/L			<0.1		
4,4-DDT	<0.1	<0.1	<0.1	<0.5	
UG/L			<0.1		
4,6-DINITRO-2-METHYLPHENOL	<50	<25	<25	<25	
UG/L			<25		
4-BROMOPHENYL-PHENYLETHER	<10	<5	<5	<5	
UG/L			<5		
4-CHLORO-3-METHYLPHENOL	<10	<5	<5	<5	
UG/L			<5		
4-CHLOROANILINE	<10	<5	<5	<5	
UG/L			<5		
4-CHLOROPHENYL-PHENYLETHER	<10	<5	<5	<5	
UG/L			<5		
4-METHYL-2-PENTANONE	<10	<10	<10	<10	
UG/L			<10		
4-METHYLPHENOL	<10	<5	<5	<5	
UG/L			<5		
4-NITROANILINE	<50	<25	<25	<25	
UG/L			<25		
4-NITROPHENOL	<50	<25	<25	<25	
UG/L			<25		
ACENAPHTHENE	<10	<5	<5	<5	
UG/L			<5		
ACENAPHTHYLENE	<10	<5	<5	<5	
UG/L			<5		
ACETONE	<10	<10	<10	<10	
UG/L			<10		
ALDRIN	<0.05	<0.05	<0.05	<0.25	
UG/L			<0.05		

GROUNDWATER MONITORING WELL DATA

BRW-17

ANALYTE	7/20/87	10/20/87	12/08/87	3/07/88	9/29/88
ALIPHATIC HYDROCARBON UG/L				1	
ALPHA ACTIVITY PCI/L	21.7	11.2	7 5	39	
ALPHA-BHC UG/L	<0.05	<0.05	<0.05 <0.05	<0.25	
ALUMINUM MG/L	0.29	0.2	0.03 0.02	<0.02	
ALUMINUM-F MG/L	0.073	<0.02	0.048 0.073	0.032	
ANTHRACENE UG/L	<10	<5	<5 <5	<5	
ANTIMONY MG/L	<0.05	<0.05	<0.05 <0.05	<0.05	
ANTIMONY-F MG/L	<0.05	<0.05	<0.05 0.1	<0.05	
ARSENIC MG/L	0.2	0.067	<0.005 <0.005	<0.005	
ARSENIC-F MG/L	0.2	0.062	<0.005 <0.005	<0.005	
BARIUM MG/L	0.13	0.038	0.033 0.033	0.034	
BARIUM-F MG/L	0.077	0.038	0.032 0.032	0.035	
BENZENE UG/L	<5	<5	<5 <5	<5	
BENZO(A)ANTHRACENE UG/L	<10	<5	<5 <5	<5	
BENZO(A)PYRENE UG/L	<10	<5	<5 <5	<5	
BENZO(B)FLUORANTHENE UG/L	<10	<5	<5 <5	<5	

GROUNDWATER MONITORING WELL DATA

BRW-17

ANALYTE	7/20/87	10/20/87	12/08/87	3/07/88	9/29/88
BENZO(G,H,I)PERYLENE	<10	<5	<5	<5	
UG/L			<5		
BENZO(K)FLUORANTHENE	<10	<5	<5	<5	
UG/L			<5		
BENZOIC ACID	<50	<25	<25	<25	
UG/L			<25		
BENZYL ALCOHOL	<10	<5	<5	<5	
UG/L			<5		
BERYLLIUM	<0.0003	<0.0003	<0.0003	<0.0003	
MG/L			<0.0003		
BERYLLIUM-F	<0.0003	<0.0003	<0.0003	<0.0003	
MG/L			0.0005		
BETA ACTIVITY	47.5	28.8	12	17	
PCI/L			10		
BETA-BHC	<0.05	<0.05	<0.05	<0.25	
UG/L			<0.05		
BHT		1	11		
UG/L			14		
BIS(2-CHLOROETHOXY)METHANE	<10	<5	<5	<5	
UG/L			<5		
BIS(2-CHLOROETHYL)ETHER	<10	<5	<5	<5	
UG/L			<5		
BIS(2-CHLOROISOPROPYL)ETHER	<10	<5	<5	<5	
UG/L			<5		
BIS(2-ETHYLHEXYL)PHTHALATE	1J	5J	<5	2J	
UG/L			<5		
BORON	0.37	0.17	0.057	0.05	
MG/L			0.058		
BORON-F	0.36	0.16	0.082	0.038	
MG/L			0.084		
BROMODICHLOROMETHANE	<5	<5	<5	<5	
UG/L			<5		

GROUNDWATER MONITORING WELL DATA

BRW-17

ANALYTE	7/20/87	10/20/87	12/08/87	3/07/88	9/29/88
BROMOFORM	<5	<5	<5	<5	
UG/L			<5		
BROMOMETHANE	<10	<10	<10	<10	
UG/L			<10		
BUTYLBENZYLPHTHALATE	<10	<5	<5	<5	
UG/L			<5		
CADMIUM	<0.003	<0.003	0.0049	<0.003	
MG/L			0.0042		
CADMIUM-F	<0.003	<0.003	0.0035	0.0045	
MG/L			<0.003		
CALCIUM	120	110	110	110	
MG/L			110		
CALCIUM-F	120	100	110	100	
MG/L			110		
CARBON DISULFIDE	<5	<5	<5	<5	
UG/L			<5		
CARBON TETRACHLORIDE	<5	<5	<5	<5	
UG/L			<5		
CHLORIDE	23	20	21	21	
MG/L			21		
CHLOROBENZENE	<5	<5	<5	<5	
UG/L			<5		
CHLOROETHANE	<10	<10	<10	<10	
UG/L			<10		
CHLOROFORM	<5	3BJ	<5	<5	
UG/L			<5		
CHLOROMETHANE	<10	<10	<10	<10	
UG/L			<10		
CHROMIUM	<0.01	<0.01	0.012	<0.01	
MG/L			0.01		
CHROMIUM-F	<0.01	<0.01	0.014	<0.01	
MG/L			<0.01		

GROUNDWATER MONITORING WELL DATA

BRW-17

ANALYTE	7/20/87	10/20/87	12/08/87	3/07/88	9/29/88
CHRYSENE	<10	<5	<5	<5	
UG/L			<5		
CIS-1,3-DICHLOROPROPENE	<5	<5	<5	<5	
UG/L			<5		
COBALT	<0.005	<0.005	<0.005	<0.005	
MG/L			<0.005		
COBALT-F	<0.005	<0.005	<0.005	<0.005	
MG/L			<0.005		
CONDUCTIVITY	700	590	860	590	698
UMHO/CM	772	715	675	633	700
	766	720	676	630	690
	767	723	670	632	703
	765	712	667	638	696
			860		
			676		
			677		
			676		
			666		
CONDUCTIVITY - INIT	160	440	588	460	841
UMHO/CM			588		
COPPER	0.013	<0.004	<0.004	0.051	
MG/L			<0.004		
COPPER-F	0.012	<0.004	<0.004	0.0083	
MG/L			<0.004		
DELTA-BHC	<0.05	<0.05	<0.05	<0.25	
UG/L			<0.05		
DEPTH	15.1	14.4	18	17	13
FEET			18		
DI-N-BUTYLPHTHALATE	<10	<5	<5	<5	
UG/L			<5		
DI-N-OCTYLPHTHALATE	<10	0.3JB	0.2J	0.2JB	
UG/L			0.3J		
DIACETONE ALCOHOL		620B	570	120AB	
UG/L			1100		

GROUNDWATER MONITORING WELL DATA

BRW-17

ANALYTE	7/20/87	10/20/87	12/08/87	3/07/88	9/29/88
DIBENZ(A,H)ANTHRACENE	<10	<5	<5	<5	
UG/L			<5		
DIBENZOFURAN	<10	<5	<5	<5	
UG/L			<5		
DIBROMOCHLOROMETHANE	<5	<5	<5	<5	
UG/L			<5		
DIELDRIN	<0.1	<0.1	<0.1	<0.5	
UG/L			<0.1		
DIETHYLPHTHALATE	<10	<5	<5	<5	
UG/L			<5		
DIMETHYLPHTHALATE	<10	<5	<5	<5	
UG/L			<5		
DISSOLVED OXYGEN	2.2	3.3	3.2	2.6	1
PPM			3.2		
DISSOLVED OXYGEN - INIT	4.1	3.7	2.6	3.9	2
PPM			2.6		
ENDOSULFAN I	<0.05	<0.05	<0.05	<0.25	
UG/L			<0.05		
ENDOSULFAN II	<0.1	<0.1	<0.1	<0.5	
UG/L			<0.1		
ENDOSULFAN SULFATE	<0.1	<0.1	<0.1	<0.5	
UG/L			<0.1		
ENDRIN	<0.1	<0.1	<0.1	<0.5	
UG/L			<0.1		
ENDRIN KETONE	<0.1	<0.1	<0.1	<0.5	
UG/L			<0.1		
ETHYLBENZENE	<5	<5	<5	<5	
UG/L			<5		
FLUORANTHENE	<10	<5	<5	<5	
UG/L			<5		
FLUORENE	<10	<5	<5	<5	
UG/L			<5		

GROUNDWATER MONITORING WELL DATA

BRW-17

ANALYTE	7/20/87	10/20/87	12/08/87	3/07/88	9/29/88
FLUORIDE	0.7	0.5	0.3	0.2	
MG/L			0.3		
GAMMA-BHC (LINDANE)	<0.05	<0.05	<0.05	<0.25	
UG/L			<0.05		
HEPTACHLOR	<0.05	<0.05	<0.05	<0.25	
UG/L			<0.05		
HEPTACHLOR EPOXIDE	<0.05	<0.05	<0.05	<0.25	
UG/L			<0.05		
HEXACHLOROBENZENE	<10	<5	<5	<5	
UG/L			<5		
HEXACHLOROBUTADIENE	<10	<5	<5	<5	
UG/L			<5		
HEXACHLOROCYCLOPENTADIENE	<10	<5	<5	<5	
UG/L			<5		
HEXACHLOROETHANE	<10	<5	<5	<5	
UG/L			<5		
HEXAMETHYLCYCLOTRISILOXANE				3	
UG/L					
INDENO(1,2,3-CD)PYRENE	<10	<5	<5	<5	
UG/L			<5		
IRON	0.22	0.14	0.11	0.29	
MG/L			0.12		
IRON-F	0.0044	<0.004	0.0065	0.084	
MG/L			<0.004		
ISOPHORONE	<10	<5	<5	<5	
UG/L			<5		
LEAD	0.012	<0.004	0.01	0.005	
MG/L			0.007		
LEAD-F	<0.004	<0.004	<0.004	0.004	
MG/L			<0.004		
LITHIUM	0.0072	0.0079	<0.004	<0.004	
MG/L			<0.004		

GROUNDWATER MONITORING WELL DATA

BRW-17

ANALYTE	7/20/87	10/20/87	12/08/87	3/07/88	9/29/88
LITHIUM-F	0.0069	0.0071	0.0045	<0.004	
MG/L			<0.004		
MAGNESIUM	19	21	15	15	
MG/L			15		
MAGNESIUM-F	19	21	14	17	
MG/L			15		
MANGANESE	0.37	0.25	0.81	0.67	
MG/L			0.8		
MANGANESE-F	0.35	0.24	0.8	0.74	
MG/L			0.79		
MERCURY	<0.0002	<0.0002	<0.0002	<0.0002	
MG/L			<0.0002		
MERCURY-F	<0.0002	<0.0002	<0.0002	<0.0002	
MG/L			<0.0002		
METHOXYCHLOR	<0.5	<0.5	<0.5	<2.5	
UG/L			<0.5		
METHYLENE CHLORIDE	3JB	<5	<5	<5	
UG/L			<5		
MOLYBDENUM	<0.01	<0.01	<0.01	<0.01	
MG/L			<0.01		
MOLYBDENUM-F	<0.01	<0.01	<0.01	<0.01	
MG/L			<0.01		
N-NITROSO-DI-N-PROPYLAMINE	<10	<5	<5	<5	
UG/L			<5		
N-NITROSODIPHENYLAMINE	<10	<5	<5	<5	
UG/L			<5		
NAPHTHALENE	<10	<5	<5	<5	
UG/L			<5		
NICKEL	<0.01	<0.01	<0.01	<0.01	
MG/L			<0.01		
NICKEL-F	<0.01	<0.01	<0.01	<0.01	
MG/L			<0.01		

GROUNDWATER MONITORING WELL DATA

BRW-17

ANALYTE	7/20/87	10/20/87	12/08/87	3/07/88	9/29/88
NIOBIUM	0.012	<0.007	<0.007	<0.007	
MG/L			<0.007		
NIOBIUM-F	0.0089	<0.007	<0.007	<0.007	
MG/L			<0.007		
NITRATE-NITROGEN	0.48	0.3	<0.11	0.14	
MG/L			0.13		
NITROBENZENE	<10	<5	<5	<5	
UG/L			<5		
PCB (AROCLOR-1016)	<0.5	<0.5	<0.5	<2.5	
UG/L			<0.5		
PCB (AROCLOR-1221)	<0.5	<0.5	<0.5	<2.5	
UG/L			<0.5		
PCB (AROCLOR-1232)	<0.5	<0.5	<0.5	<2.5	
UG/L			<0.5		
PCB (AROCLOR-1242)	<0.5	<0.5	<0.5	<2.5	
UG/L			<0.5		
PCB (AROCLOR-1248)	<0.5	<0.5	<0.5	<2.5	
UG/L			<0.5		
PCB (AROCLOR-1254)	<1	<1	<1	<5	
UG/L			<1		
PCB (AROCLOR-1260)	<1	<1	<1	<5	
UG/L			<1		
PENTACHLOROPHENOL	<50	<25	<25	<25	
UG/L			<25		
PH	7.1	7.8	6.9	7.2	7.2
	7.1	6.9	7	6.9	7.2
	7	6.9	6.9	6.9	7.2
	7	7	7	6.9	7.2
	7	7.1	7	7.1	6.8
			6.9		
			7.1		
			7.2		
			7		
			7.1		

GROUNDWATER MONITORING WELL DATA

BRW-17

ANALYTE	7/20/87	10/20/87	12/08/87	3/07/88	9/29/88
PH - INIT	5.5	7.1	6.8 6.8	7	6.8
PHENANTHRENE UG/L	<10	<5	<5 <5	<5	
PHENOL UG/L	<10	<5	<5 <5	<5	
PHENOLS MG/L	<0.001	0.003	<0.001 <0.001	<0.001	
PHOSPHORUS MG/L	<0.2	<0.2	<0.2 <0.2	<0.2	
PHOSPHORUS-F MG/L	<0.2	<0.2	<0.2 <0.2	<0.2	
POTASSIUM MG/L	5	<0.6	3.9 5.5	1.5	
POTASSIUM-F MG/L	4.8	<0.6	3.9 3.9	2.6	
PROBABLE HYDROCARBON #1 UG/L			5B 6B		
PROBABLE HYDROCARBON #2 UG/L			5B 9B		
PROBABLE HYDROCARBON #3 UG/L			9B 19B		
PROBABLE HYDROCARBON #4 UG/L			9B		
PROBABLE HYDROCARBONS UG/L			65 68		
PYRENE UG/L	<10	<5	<5 <5	<5	
REDOX MV	250	345	190 190	217	190
REDOX - INIT MV	194	257	210 210	216	186

GROUNDWATER MONITORING WELL DATA

BRW-17

ANALYTE	7/20/87	10/20/87	12/08/87	3/07/88	9/29/88
SELENIUM MG/L	<0.005	<0.005	<0.005 <0.005	<0.005	
SELENIUM-F MG/L	<0.005	<0.005	<0.005 <0.005	<0.005	
SILICON MG/L	5.6	5.1	4.6 4.6	4.4	
SILICON-F MG/L	5.1	3.5	4.5 4.5	4.5	
SILVER MG/L	<0.006	<0.006	<0.006 <0.006	<0.006	
SILVER-F MG/L	<0.006	<0.006	<0.006 <0.006	<0.006	
SODIUM MG/L	21	13	8.2 8.3	9	
SODIUM-F MG/L	21	13	8.2 8.3	8.9	
STRONTIUM MG/L	0.097	0.098	0.075 0.076	0.076	
STRONTIUM-F MG/L	0.096	0.1	0.073 0.075	0.08	
STYRENE UG/L	<5	<5	<5 <5	<5	
SUBSTITUTED HYDROCARBON UG/L	8				
SULFATE MG/L	43	54	43 42	45	
T. CHLORDANE UG/L	<0.5	<0.5	<0.5 <0.5	<2.5	
TEMPERATURE DEG C	18	15.3	17.1 17.1	17.4	18.1
TEMPERATURE - INIT DEG C	18	14.3	16.5 16.5	19.3	18.6

GROUNDWATER MONITORING WELL DATA

BRW-17

ANALYTE	7/20/87	10/20/87	12/08/87	3/07/88	9/29/88
TETRACHLOROETHENE	<5	1J	<5	<5	
UG/L			<5		
THALLIUM	<0.01	<0.01	<0.01	<0.01	
MG/L			<0.01		
THALLIUM-F	<0.01	<0.01	<0.01	<0.01	
MG/L			<0.01		
THORIUM	<0.2	<0.2	<0.2	<0.2	
MG/L			<0.2		
THORIUM-F	<0.2	<0.2	<0.2	<0.2	
MG/L			<0.2		
TITANIUM	0.0056	0.0042	0.0057	<0.003	
MG/L			0.006		
TITANIUM-F	<0.003	<0.003	0.0056	<0.003	
MG/L			0.01		
TOC	1.6	<1	1.2	1.7	3
MG/L	1.5	1.1	<1	1.4	3
	1.6	2.8	1.1	1.6	3
	1.7	1.2	<1	1.4	3
			1.1		
			1.2		
			1.1		
			1.1		
TOLUENE	1JB	<5	<5	<5	
UG/L			<5		
TOTAL COLIFORM BACTERIA	10	18	6	3	
COL/100ML			5		
TOTAL XYLENES	<5	<5	<5	<5	
UG/L			<5		
TOX	12	43	29	45	35
UG/L	25	12	12	68	19
	21	15	18	18	45
	22	10	14	74	35
			20		
			31		
			15		
			18		

GROUNDWATER MONITORING WELL DATA

BRW-17

ANALYTE	7/20/87	10/20/87	12/08/87	3/07/88	9/29/88
TOXAPHENE UG/L	<1	<1	<1 <1	<5	
TRANS-1,2-DICHLOROETHENE UG/L	4J	2J	<5 <5	3J	
TRANS-1,3-DICHLOROPROPENE UG/L	<5	<5	<5 <5	<5	
TRICHLOROETHENE UG/L	4J	6	3BJ 2BJ	4J	
TURBIDITY NTU	4.8	4.5	1.1 1	1.5	
U-235 WT.%	1.4	1.52	1.5 1.5		
UNKNOWN UG/L				2	
UNKNOWNS UG/L		60	100 150		
URANIUM MG/L	0.025	0.024	0.013 0.009	0.006	
URANIUM-F MG/L	0.022	0.022	0.015 0.013	0.008	
VANADIUM MG/L	<0.005	<0.005	<0.005 <0.005	<0.005	
VANADIUM-F MG/L	<0.005	<0.005	<0.005 <0.005	<0.005	
VINYL ACETATE UG/L	<10	<10	<10 <10	<10	
VINYL CHLORIDE UG/L	<10	<10	<10 <10	<10	
ZINC MG/L	0.0062	0.034	0.01 0.0064	<0.001	
ZINC-F MG/L	0.0055	0.037	0.0079 0.0073	<0.001	

GROUNDWATER MONITORING WELL DATA

BRW-17

ANALYTE	7/20/87	10/20/87	12/08/87	3/07/88	9/29/88
ZIRCONIUM	<0.005	<0.005	<0.005	<0.005	
MG/L			<0.005		
ZIRCONIUM-F	<0.005	<0.005	<0.005	<0.005	
MG/L			0.0061		

GROUNDWATER MONITORING WELL DATA

BRW-18

ANALYTE	7/22/87	10/16/87	12/08/87	3/07/88	9/29/88
1,1,1-TRICHLOROETHANE UG/L	150	120	160B	150	
1,1,2,2-TETRACHLOROETHANE UG/L	<5	<5	<5	<5	
1,1,2-TRICHLOROETHANE UG/L	18	17	24	16	
1,1-DICHLOROETHANE UG/L	17	17	20B	19	
1,1-DICHLOROETHENE UG/L	16	20	22	18	
1,2,4-TRICHLOROBENZENE UG/L	<10	<5	<5	<5	
1,2-DICHLOROBENZENE UG/L	<10	<5	<5	<5	
1,2-DICHLOROETHANE UG/L	<5	<5	<5	<5	
1,2-DICHLOROPROPANE UG/L	<5	<5	<5	<5	
1,3-DICHLOROBENZENE UG/L	<10	<5	<5	<5	
1,4-DICHLOROBENZENE UG/L	<10	<5	<5	<5	
2,4,5-T UG/L	<0.1	<0.1	<0.1	<0.1	
2,4,5-TP (SILVEX) UG/L	<0.1	<0.1	<0.1	<0.1	
2,4,5-TRICHLOROPHENOL UG/L	<50	<25	<25	<25	
2,4,6-TRICHLOROPHENOL UG/L	<10	<5	<5	<5	
2,4-D UG/L	<1	<1	<1	<1	

GROUNDWATER MONITORING WELL DATA

BRW-18

ANALYTE	7/22/87	10/16/87	12/08/87	3/07/88	9/29/88
2,4-DICHLOROPHENOL UG/L	<10	<5	<5	<5	
2,4-DIMETHYLPHENOL UG/L	<10	<5	<5	<5	
2,4-DINITROPHENOL UG/L	<50	<25	<25	<25	
2,4-DINITROTOLUENE UG/L	<10	<5	<5	<5	
2,6-DINITROTOLUENE UG/L	<10	<5	<5	<5	
2-BUTANONE UG/L	<10	<10	<10	<10	
2-CHLOROETHYLVINYL ETHER UG/L	<10	<10	<10	<10	
2-CHLORONAPHTHALENE UG/L	<10	<5	<5	<5	
2-CHLOROPHENOL UG/L	<10	<5	<5	<5	
2-HEXANONE UG/L	<10	<10	<10	<10	
2-METHYLNAPHTHALENE UG/L	<10	<5	<5	<5	
2-METHYLPHENOL UG/L	<10	<5	<5	<5	
2-NITROANILINE UG/L	<50	<25	<25	<25	
2-NITROPHENOL UG/L	<10	<5	<5	<5	
3,3-DICHLOROBENZIDINE UG/L	<20	<10	<10	<10	
3-NITROANILINE UG/L	<50	<25	<25	<25	

GROUNDWATER MONITORING WELL DATA

BRW-18

ANALYTE	7/22/87	10/16/87	12/08/87	3/07/88	9/29/88
4,4-DDD UG/L	<0.1	<0.1	<0.1	<0.1	
4,4-DDE UG/L	<0.1	<0.1	<0.1	<0.1	
4,4-DDT UG/L	<0.1	<0.1	<0.1	<0.1	
4,6-DINITRO-2-METHYLPHENOL UG/L	<50	<25	<25	<25	
4-BROMOPHENYL-PHENYLETHER UG/L	<10	<5	<5	<5	
4-CHLORO-3-METHYLPHENOL UG/L	<10	<5	<5	<5	
4-CHLOROANILINE UG/L	<10	<5	<5	<5	
4-CHLOROPHENYL-PHENYLETHER UG/L	<10	<5	<5	<5	
4-METHYL-2-PENTANONE UG/L	<10	<10	<10	<10	
4-METHYLPHENOL UG/L	<10	<5	<5	<5	
4-NITROANILINE UG/L	<50	<25	<25	<25	
4-NITROPHENOL UG/L	<50	<25	<25	<25	
ACENAPHTHENE UG/L	<10	<5	<5	<5	
ACENAPHTHYLENE UG/L	<10	<5	<5	<5	
ACETONE UG/L	<10	<10	<10	<10	
ALDRIN UG/L	<0.05	<0.05	<0.05	<0.05	

GROUNDWATER MONITORING WELL DATA

BRW-18

ANALYTE	7/22/87	10/16/87	12/08/87	3/07/88	9/29/88
ALIPHATIC HYDROCARBON UG/L				2	
ALPHA ACTIVITY PCI/L	55.1	19.3	23	8	
ALPHA-BHC UG/L	<0.05	<0.05	<0.05	<0.05	
ALUMINUM MG/L	0.12	0.05	5.5	0.083	
ALUMINUM-F MG/L	0.091	<0.02	<0.02	<0.02	
ANTHRACENE UG/L	<10	<5	<5	<5	
ANTIMONY MG/L	<0.05	<0.05	<0.05	<0.05	
ANTIMONY-F MG/L	<0.05	<0.05	<0.05	<0.05	
ARSENIC MG/L	<0.005	<0.005	<0.005	<0.005	
ARSENIC-F MG/L	<0.005	<0.005	<0.005	<0.005	
BARIUM MG/L	0.084	0.044	0.18	0.039	
BARIUM-F MG/L	0.046	0.041	0.044	0.039	
BENZENE UG/L	<5	<5	<5	<5	
BENZO(A)ANTHRACENE UG/L	<10	<5	<5	<5	
BENZO(A)PYRENE UG/L	<10	<5	<5	<5	
BENZO(B)FLUORANTHENE UG/L	<10	<5	<5	<5	

GROUNDWATER MONITORING WELL DATA

BRW-18

ANALYTE	7/22/87	10/16/87	12/08/87	3/07/88	9/29/88
BENZO(G,H,I)PERYLENE UG/L	<10	<5	<5	<5	
BENZO(K)FLUORANTHENE UG/L	<10	<5	<5	<5	
BENZOIC ACID UG/L	<50	<25	<25	<25	
BENZYL ALCOHOL UG/L	<10	<5	<5	<5	
BERYLLIUM MG/L	<0.0003	<0.0003	0.0004	<0.0003	
BERYLLIUM-F MG/L	<0.0003	<0.0003	<0.0003	<0.0003	
BETA ACTIVITY PCI/L	51.1	59.6	75	65	
BETA-BHC UG/L	<0.05	<0.05	<0.05	<0.05	
BHT UG/L			11		
BIS(2-CHLOROETHOXY)METHANE UG/L	<10	<5	<5	<5	
BIS(2-CHLOROETHYL)ETHER UG/L	<10	<5	<5	<5	
BIS(2-CHLOROISOPROPYL)ETHER UG/L	<10	<5	<5	<5	
BIS(2-ETHYLHEXYL)PHTHALATE UG/L	<10	2J	<5	<5	
BORON MG/L	0.11	0.1	0.13	0.09	
BORON-F MG/L	0.11	0.099	0.11	0.11	
BROMODICHLOROMETHANE UG/L	<5	<5	<5	<5	

GROUNDWATER MONITORING WELL DATA

BRW-18

ANALYTE	7/22/87	10/16/87	12/08/87	3/07/88	9/29/88
BROMOFORM UG/L	<5	<5	<5	<5	
BROMOMETHANE UG/L	<10	<10	<10	<10	
BUTYLBENZYLPHTHALATE UG/L	<10	<5	<5	<5	
CADMIUM MG/L	<0.003	<0.003	<0.003	0.0063	
CADMIUM-F MG/L	<0.003	<0.003	<0.003	0.0035	
CALCIUM MG/L	120	110	180	160	
CALCIUM-F MG/L	120	110	120	150	
CARBON DISULFIDE UG/L	<5	<5	<5	<5	
CARBON TETRACHLORIDE UG/L	<5	<5	<5	<5	
CHLORIDE MG/L	14	15.9	17	14.8	
CHLOROBENZENE UG/L	<5	<5	<5	<5	
CHLOROETHANE UG/L	<10	<10	<10	<10	
CHLOROFORM UG/L	0.6BJ	3BJ	<5	<5	
CHLOROMETHANE UG/L	<10	<10	<10	<10	
CHROMIUM MG/L	<0.01	<0.01	0.02	<0.01	
CHROMIUM-F MG/L	<0.01	<0.01	0.01	<0.01	

GROUNDWATER MONITORING WELL DATA

BRW-18

ANALYTE	7/22/87	10/16/87	12/08/87	3/07/88	9/29/88
CHRYSENE UG/L	<10	<5	<5	<5	
CIS-1,3-DICHLOROPROPENE UG/L	<5	<5	<5	<5	
COBALT MG/L	<0.005	<0.005	<0.005	<0.005	
COBALT-F MG/L	<0.005	<0.005	<0.005	<0.005	
CONDUCTIVITY UMHO/CM	680	610	620	930	785
	738	714	748	932	788
	736	713	779	936	791
	735	714	778	934	781
	738	718	774	938	790
CONDUCTIVITY - INIT. UMHO/CM	770	600	620	940	831
COPPER MG/L	<0.004	<0.004	<0.004	<0.004	
COPPER-F MG/L	<0.004	<0.004	<0.004	0.016	
DELTA-BHC UG/L	<0.05	<0.05	<0.05	<0.05	
DEPTH FEET	35.1	34	38.3	37.9	32
DI-N-BUTYLPHTHALATE UG/L	<10	<5	<5	<5	
DI-N-OCTYLPHTHALATE UG/L	<10	0.8JB	0.2J	<5	
DIACETONE ALCOHOL UG/L		190B	1000	7A	
DIBENZ(A,H)ANTHRACENE UG/L	<10	<5	<5	<5	
DIBENZOFURAN UG/L	<10	<5	<5	<5	

GROUNDWATER MONITORING WELL DATA

BRW-18

ANALYTE	7/22/87	10/16/87	12/08/87	3/07/88	9/29/88
DIBROMOCHLOROMETHANE UG/L	<5	<5	<5	<5	
DIELDRIN UG/L	<0.1	<0.1	<0.1	<0.1	
DIETHYLPHTHALATE UG/L	<10	<5	<5	<5	
DIMETHYLPHTHALATE UG/L	<10	<5	<5	<5	
DISSOLVED OXYGEN PPM	3.5	3.4	6.8	8.6	2.5
DISSOLVED OXYGEN - INIT PPM	2.2	3.4	3.3	10.1	0.6
ENDOSULFAN I UG/L	<0.05	<0.05	<0.05	<0.05	
ENDOSULFAN II UG/L	<0.1	<0.1	<0.1	<0.1	
ENDOSULFAN SULFATE UG/L	<0.1	<0.1	<0.1	<0.1	
ENDRIN UG/L	<0.1	<0.1	<0.1	<0.1	
ENDRIN KETONE UG/L	<0.1	<0.1	<0.1	<0.1	
ETHYLBENZENE UG/L	<5	<5	<5	<5	
FLUORANTHENE UG/L	<10	<5	<5	<5	
FLUORENE UG/L	<10	<5	<5	<5	
FLUORIDE MG/L	0.2	0.3	0.4	0.2	
FREON 113 UG/L	2	3			

GROUNDWATER MONITORING WELL DATA

BRW-18

ANALYTE	7/22/87	10/16/87	12/08/87	3/07/88	9/29/88
GAMMA-BHC (LINDANE) UG/L	<0.05	<0.05	<0.05	<0.05	
HEPTACHLOR UG/L	<0.05	<0.05	<0.05	<0.05	
HEPTACHLOR EPOXIDE UG/L	<0.05	<0.05	<0.05	<0.05	
HEXACHLOROBENZENE UG/L	<10	<5	<5	<5	
HEXACHLOROBUTADIENE UG/L	<10	<5	<5	<5	
HEXACHLOROCYCLOPENTADIENE UG/L	<10	<5	<5	<5	
HEXACHLOROETHANE UG/L	<10	<5	<5	<5	
HEXAMETHYLCYCLOTRISILOXANE UG/L				3	
INDENO(1,2,3-CD)PYRENE UG/L	<10	<5	<5	<5	
IRON MG/L	0.042	0.027	5	0.11	
IRON-F MG/L	<0.004	<0.004	<0.004	0.17	
ISOPHORONE UG/L	<10	<5	<5	<5	
LEAD MG/L	0.004	<0.004	0.006	0.007	
LEAD-F MG/L	<0.004	<0.004	<0.004	<0.004	
LITHIUM MG/L	0.0045	0.0083	0.011	<0.004	
LITHIUM-F MG/L	0.004	0.0079	<0.004	<0.004	

GROUNDWATER MONITORING WELL DATA

BRW-18

ANALYTE	7/22/87	10/16/87	12/08/87	3/07/88	9/29/88
MAGNESIUM MG/L	21	21	25	24	
MAGNESIUM-F MG/L	21	21	20	26	
MANGANESE MG/L	0.0089	<0.001	0.099	0.0056	
MANGANESE-F MG/L	0.0059	<0.001	0.0055	0.0031	
MERCURY MG/L	<0.0002	<0.0002	<0.0002	<0.0002	
MERCURY-F MG/L	<0.0002	<0.0002	<0.0002	<0.0002	
METHOXYCHLOR UG/L	<0.5	<0.5	<0.5	<0.5	
METHYLENE CHLORIDE UG/L	<5	<5	<5	<5	
MOLYBDENUM MG/L	<0.01	<0.01	<0.01	<0.01	
MOLYBDENUM-F MG/L	<0.01	<0.01	<0.01	<0.01	
N-NITROSO-DI-N-PROPYLAMINE UG/L	<10	<5	<5	<5	
N-NITROSODIPHENYLAMINE UG/L	<10	<5	<5	<5	
NAPHTHALENE UG/L	<10	<5	<5	<5	
NICKEL MG/L	<0.01	<0.01	<0.01	<0.01	
NICKEL-F MG/L	<0.01	<0.01	<0.01	<0.01	
NIOBIUM MG/L	0.015	<0.007	<0.007	<0.007	

GROUNDWATER MONITORING WELL DATA

BRW-18

ANALYTE	7/22/87	10/16/87	12/08/87	3/07/88	9/29/88
NIOBIUM-F MG/L	0.011	<0.007	<0.007	<0.007	
NITRATE-NITROGEN MG/L	3.84	3.61	5.7	9.58	
NITROBENZENE UG/L	<10	<5	<5	<5	
PCB (AROCLOR-1016) UG/L	<0.5	<0.5	<0.5	<0.5	
PCB (AROCLOR-1221) UG/L	<0.5	<0.5	<0.5	<0.5	
PCB (AROCLOR-1232) UG/L	<0.5	<0.5	<0.5	<0.5	
PCB (AROCLOR-1242) UG/L	<0.5	<0.5	<0.5	<0.5	
PCB (AROCLOR-1248) UG/L	<0.5	<0.5	<0.5	<0.5	
PCB (AROCLOR-1254) UG/L	<1	<1	<1	<1	
PCB (AROCLOR-1260) UG/L	<1	<1	<1	<1	
PENTACHLOROPHENOL UG/L	<50	<25	<25	<25	
PH	7.1	7	7.9	7.7	7
	7.2	7.2	7.1	7.1	6.9
	7.3	7.2	7.1	7.2	7
	7.2	7.1	7.1	7	7
	7.2	7.1	7.2	7.1	7
PH - INIT	7.3	6.4	8.2	9	7.1
PHENANTHRENE UG/L	<10	<5	<5	<5	
PHENOL UG/L	<10	<5	<5	<5	

GROUNDWATER MONITORING WELL DATA

BRW-18

ANALYTE	7/22/87	10/16/87	12/08/87	3/07/88	9/29/88
PHENOLS MG/L	<0.001	0.002	<0.001	<0.001	
PHOSPHORUS MG/L	<0.2	<0.2	<0.2	<0.2	
PHOSPHORUS-F MG/L	<0.2	<0.2	<0.2	<0.2	
POTASSIUM MG/L	1.9	0.72	3.6	1.6	
POTASSIUM-F MG/L	1.7	1.4	3.1	3.4	
PROBABLE HYDROCARBONS UG/L			41		
PYRENE UG/L	<10	<5	<5	<5	
REDOX MV	209	198	276	225	251
REDOX - INIT MV	196	175	253	164	258
SELENIUM MG/L	<0.005	<0.005	<0.005	<0.005	
SELENIUM-F MG/L	<0.005	<0.005	<0.005	<0.005	
SILICON MG/L	3.2	3	11	2.9	
SILICON-F MG/L	3.2	3	2.8	3.6	
SILVER MG/L	<0.006	<0.006	<0.006	<0.006	
SILVER-F MG/L	<0.006	<0.006	<0.006	<0.006	
SODIUM MG/L	9	9.2	8.1	6.5	

GROUNDWATER MONITORING WELL DATA

BRW-18

ANALYTE	7/22/87	10/16/87	12/08/87	3/07/88	9/29/88
SODIUM-F MG/L	8.9	9	8	7.3	
STRONTIUM MG/L	0.35	0.28	0.38	0.34	
STRONTIUM-F MG/L	0.35	0.28	0.32	0.34	
STYRENE UG/L	<5	<5	<5	<5	
SULFATE MG/L	80	75	81	197	
T. CHLORDANE UG/L	<0.5	<0.5	<0.5	<0.5	
TECHNETIUM-99 PCI/L				172	
TEMPERATURE DEG C	17.5	16.7	19.8	19	24.2
TEMPERATURE - INIT DEG C	18	12.5	18.8	20.4	20.2
TETRACHLOROETHENE UG/L	<5	<5	<5	<5	
THALLIUM MG/L	<0.01	<0.01	<0.01	<0.01	
THALLIUM-F MG/L	<0.01	<0.01	<0.01	<0.01	
THORIUM MG/L	<0.2	<0.2	<0.2	<0.2	
THORIUM-234 PCI/L			--	29	
THORIUM-F MG/L	<0.2	<0.2	<0.2	<0.2	
TITANIUM MG/L	<0.003	<0.003	0.072	<0.003	

GROUNDWATER MONITORING WELL DATA

BRW-18

ANALYTE	7/22/87	10/16/87	12/08/87	3/07/88	9/29/88
TITANIUM-F MG/L	<0.003	<0.003	0.0049	<0.003	
TOC MG/L	1.7	2	1.6	2.8	4
	1.8	2.6	1.7	2.8	5
	2.6	2.6	1.6	2.9	4
	2	2.1	1.6	2.9	5
TOLUENE UG/L	2BJ	1BJ	<5	<5	
TOTAL COLIFORM BACTERIA COL/100ML	54	19	2	55	
TOTAL XYLENES UG/L	<5	<5	<5	<5	
TOX UG/L	119	117	143	151	125
	125	131	182	175	88
	126	131	246	177	109
	116	115	151	182	118
TOXAPHENE UG/L	<1	<1	<1	<1	
TRANS-1,2-DICHLOROETHENE UG/L	<5	<5	<5	<5	
TRANS-1,3-DICHLOROPROPENE UG/L	<5	<5	<5	<5	
TRICHLOROETHANE UG/L				9	
TRICHLOROETHENE UG/L	<5	4J	<5	<5	
TURBIDITY NTU	1.9	0.95	<180	2.8	
U-235 WT.%		1.02	1.13		
UNKNOWN ALDOL-CONDENSATION PRO UG/L				30A	
UNKNOWNS UG/L		50	67	8	

GROUNDWATER MONITORING WELL DATA

BRW-18

ANALYTE	7/22/87	10/16/87	12/08/87	3/07/88	9/29/88
URANIUM MG/L	0.044	0.037	0.027	0.036	
URANIUM-F MG/L	0.042	0.037	0.034	0.038	
VANADIUM MG/L	<0.005	<0.005	0.0065	<0.005	
VANADIUM-F MG/L	<0.005	<0.005	<0.005	<0.005	
VINYL ACETATE UG/L	<10	<10	<10	<10	
VINYL CHLORIDE UG/L	<10	<10	<10	<10	
ZINC MG/L	0.0048	0.0031	0.03	0.0089	
ZINC-F MG/L	0.0042	0.0031	0.0089	0.0069	
ZIRCONIUM MG/L	<0.005	<0.005	<0.005	<0.005	
ZIRCONIUM-F MG/L	<0.005	<0.005	<0.005	<0.005	

GROUNDWATER MONITORING WELL DATA

BRW-19

ANALYTE	7/23/87	10/16/87	12/07/87	3/07/88	9/29/88
1,1,1-TRICHLOROETHANE UG/L	<5	<5	<5	<5	
1,1,2,2-TETRACHLOROETHANE UG/L	<5	<5	<5	<5	
1,1,2-TRICHLOROETHANE UG/L	<5	<5	<5	<5	
1,1-DICHLOROETHANE UG/L	<5	<5	<5	<5	
1,1-DICHLOROETHENE UG/L	<5	<5	<5	<5	
1,2,4-TRICHLOROBENZENE UG/L	<10	<5	<5	<5	
1,2-DICHLOROBENZENE UG/L	<10	<5	<5	<5	
1,2-DICHLOROETHANE UG/L	<5	<5	<5	<5	
1,2-DICHLOROPROPANE UG/L	<5	<5	<5	<5	
1,3-DICHLOROBENZENE UG/L	<10	<5	<5	<5	
1,4-DICHLOROBENZENE UG/L	<10	<5	<5	<5	
2,4,5-T UG/L	<0.1	<0.1	<0.1	<0.1	
2,4,5-TP (SILVEX) UG/L	<0.1	<0.1	<0.1	<0.1	
2,4,5-TRICHLOROPHENOL UG/L	<50	<25	<25	<25	
2,4,6-TRICHLOROPHENOL UG/L	<10	<5	<5	<5	
2,4-D UG/L	<1	<1	<1	<1	

GROUNDWATER MONITORING WELL DATA

BRW-19

ANALYTE	7/23/87	10/16/87	12/07/87	3/07/88	9/29/88
2,4-DICHLOROPHENOL UG/L	<10	<5	<5	<5	
2,4-DIMETHYLPHENOL UG/L	<10	<5	<5	<5	
2,4-DINITROPHENOL UG/L	<50	<25	<25	<25	
2,4-DINITROTOLUENE UG/L	<10	<5	<5	<5	
2,6-DINITROTOLUENE UG/L	<10	<5	<5	<5	
2-BUTANONE UG/L	<10	<10	<10	<10	
2-CHLOROETHYLVINYL ETHER UG/L	<10	<10	<10	<10	
2-CHLORONAPHTHALENE UG/L	<10	<5	<5	<5	
2-CHLOROPHENOL UG/L	<10	<5	<5	<5	
2-HEXANONE UG/L	<10	<10	<10	<10	
2-METHYLNAPHTHALENE UG/L	<10	<5	<5	<5	
2-METHYLPHENOL UG/L	<10	<5	<5	<5	
2-NITROANILINE UG/L	<50	<25	<25	<25	
2-NITROPHENOL UG/L	<10	<5	<5	<5	
3,3-DICHLOROBENZIDINE UG/L	<20	<10	<10	<10	
3-NITROANILINE UG/L	<50	<25	<25	<25	

GROUNDWATER MONITORING WELL DATA

BRW-19

ANALYTE	7/23/87	10/16/87	12/07/87	3/07/88	9/29/88
4,4-DDD UG/L	<0.1	<0.1	<0.1	<0.1	
4,4-DDE UG/L	<0.1	<0.1	<0.1	<0.1	
4,4-DDT UG/L	<0.1	<0.1	<0.1	<0.1	
4,6-DINITRO-2-METHYLPHENOL UG/L	<50	<25	<25	<25	
4-BROMOPHENYL-PHENYLETHER UG/L	<10	<5	<5	<5	
4-CHLORO-3-METHYLPHENOL UG/L	<10	<5	<5	<5	
4-CHLOROANILINE UG/L	<10	<5	<5	<5	
4-CHLOROPHENYL-PHENYLETHER UG/L	<10	<5	<5	<5	
4-METHYL-2-PENTANONE UG/L	<10	<10	<10	8J	
4-METHYLPHENOL UG/L	<10	<5	<5	<5	
4-NITROANILINE UG/L	<50	<25	<25	<25	
4-NITROPHENOL UG/L	<50	<25	<25	<25	
ACENAPHTHENE UG/L	<10	<5	<5	<5	
ACENAPHTHYLENE UG/L	<10	<5	<5	<5	
ACETONE UG/L	<10	<10	<10	<10	
ALDRIN UG/L	<0.05	<0.05	<0.05	<0.05	

GROUNDWATER MONITORING WELL DATA

BRW-19

ANALYTE	7/23/87	10/16/87	12/07/87	3/07/88	9/29/88
ALPHA ACTIVITY PCI/L	27.7	32.4	41	220	
ALPHA-BHC UG/L	<0.05	<0.05	<0.05	<0.05	
ALUMINUM MG/L	1.2	7	10	380	
ALUMINUM-F MG/L	0.18	<0.02	0.13	0.023	
ANTHRACENE UG/L	<10	<5	<5	<5	
ANTIMONY MG/L	<0.05	<0.05	<0.05	<5	
ANTIMONY-F MG/L	<0.05	0.072	<0.05	<0.05	
ARSENIC MG/L	<0.005	<0.005	<0.005	0.011	
ARSENIC-F MG/L	<0.005	<0.005	<0.005	<0.005	
BARIUM MG/L	0.14	0.049	0.059	1.4	
BARIUM-F MG/L	0.032	0.026	0.022	0.014	
BENZENE UG/L	<5	<5	<5	<5	
BENZO(A)ANTHRACENE UG/L	<10	<5	<5	<5	
BENZO(A)PYRENE UG/L	<10	<5	<5	<5	
BENZO(B)FLUORANTHENE UG/L	<10	<5	<5	<5	
BENZO(G,H,I)PERYLENE UG/L	<10	<5	<5	<5	

GROUNDWATER MONITORING WELL DATA

BRW-19

ANALYTE	7/23/87	10/16/87	12/07/87	3/07/88	9/29/88
BENZO(K)FLUORANTHENE UG/L	<10	<5	<5	<5	
BENZOIC ACID UG/L	<50	<25	<25	<25	
BENZYL ALCOHOL UG/L	<10	<5	<5	<5	
BERYLLIUM MG/L	<0.0003	0.0003	0.0007	<0.03	
BERYLLIUM-F MG/L	<0.0003	0.0004	<0.0003	<0.0003	
BETA ACTIVITY PCI/L	39.6	9.1	56	298	
BETA-BHC UG/L	<0.05	<0.05	<0.05	<0.05	
BHT UG/L			8B		
BIS(2-CHLOROETHOXY)METHANE UG/L	<10	<5	<5	<5	
BIS(2-CHLOROETHYL)ETHER UG/L	<10	<5	<5	<5	
BIS(2-CHLOROISOPROPYL)ETHER UG/L	<10	<5	<5	<5	
BIS(2-ETHYLHEXYL)PHTHALATE UG/L	<10	3J	1J	9J	
BORON MG/L	4.6	4.7	4.4	6	
BORON-F MG/L	4.8	4.7	4.4	4.1	
BROMODICHLOROMETHANE UG/L	<5	<5	<5	<5	
BROMOFORM UG/L	<5	<5	<5	<5	

GROUNDWATER MONITORING WELL DATA

BRW-19

ANALYTE	7/23/87	10/16/87	12/07/87	3/07/88	9/29/88
BROMOMETHANE UG/L	<10	<10	<10	<10	
BUTYLBENZYLPHTHALATE UG/L	<10	<5	<5	<5	
CADMIUM MG/L	<0.003	<0.003	<0.003	<0.3	
CADMIUM-F MG/L	<0.003	<0.003	<0.003	<0.003	
CALCIUM MG/L	31	40	52	3400	
CALCIUM-F MG/L	14	10	11	7.3	
CARBON DISULFIDE UG/L	<5	<5	<5	<5	
CARBON TETRACHLORIDE UG/L	<5	<5	<5	<5	
CHLORIDE MG/L	130	100	150	72	
CHLOROBENZENE UG/L	<5	<5	<5	<5	
CHLOROETHANE UG/L	<10	<10	<10	<10	
CHLOROFORM UG/L	<5	2BJ	<5	<5	
CHLOROMETHANE UG/L	<10	<10	<10	<10	
CHROMIUM MG/L	0.01	<0.01	0.027	<1	
CHROMIUM-F MG/L	<0.01	<0.01	<0.01	<0.01	
CHRYSENE UG/L	<10	<5	<5	<5	

GROUNDWATER MONITORING WELL DATA

BRW-19

ANALYTE	7/23/87	10/16/87	12/07/87	3/07/88	9/29/88
CIS-1,3-DICHLOROPROPENE UG/L	<5	<5	<5	<5	
COBALT MG/L	<0.005	<0.005	<0.005	<0.5	
COBALT-F MG/L	<0.005	<0.005	<0.005	<0.005	
CONDUCTIVITY UMHO/CM	2800	2380	2940	2720	3372
	3000	3170	3270	3260	3380
		3190	3230	3280	3600
		3200	3210	3300	3379
		3200	3220	3300	3386
CONDUCTIVITY - INIT UMHO/CM	2580	2340	2780	2750	226
COPPER MG/L	<0.004	0.034	0.089	1.9	
COPPER-F MG/L	<0.004	<0.004	<0.004	<0.004	
DELTA-BHC UG/L	<0.05	<0.05	<0.05	<0.05	
DEPTH FEET	41.4	40.5	44.5	44	39.5
DI-N-BUTYLPHTHALATE UG/L	<10	<5	<5	<5	
DI-N-OCTYLPHTHALATE UG/L	<10	0.6JB	0.8JB	<5	
DIACETONE ALCOHOL UG/L		610B	1300B		
DIBENZ(A,H)ANTHRACENE UG/L	<10	<5	<5	<5	
DIBENZOFURAN UG/L	<10	<5	<5	<5	
DIBROMOCHLOROMETHANE UG/L	<5	<5	<5	<5	

GROUNDWATER MONITORING WELL DATA

BRW-19

ANALYTE	7/23/87	10/16/87	12/07/87	3/07/88	9/29/88
DIELDRIN UG/L	<0.1	<0.1	<0.1	<0.1	
DIETHYLPHTHALATE UG/L	<10	3JB	<5	0.6J	
DIMETHYLPHTHALATE UG/L	<10	<5	<5	<5	
DISSOLVED OXYGEN PPM	3.7	3	12.7	3.6	4.9
DISSOLVED OXYGEN - INIT PPM	1.9	4.6	3.4	2.4	1
ENDOSULFAN I UG/L	<0.05	<0.05	<0.05	<0.05	
ENDOSULFAN II UG/L	<0.1	<0.1	<0.1	<0.1	
ENDOSULFAN SULFATE UG/L	<0.1	<0.1	<0.1	<0.1	
ENDRIN UG/L	<0.1	<0.1	<0.1	<0.1	
ENDRIN KETONE UG/L	<0.1	<0.1	<0.1	<0.1	
ETHYLBENZENE UG/L	<5	<5	<5	<5	
FLUORANTHENE UG/L	<10	<5	<5	<5	
FLUORENE UG/L	<10	<5	<5	<5	
FLUORIDE MG/L	4.9	7	5	6.4	
GAMMA-BHC (LINDANE) UG/L	<0.05	<0.05	<0.05	<0.05	
HEPTACHLOR UG/L	<0.05	<0.05	<0.05	<0.05	

GROUNDWATER MONITORING WELL DATA

BRW-19

ANALYTE	7/23/87	10/16/87	12/07/87	3/07/88	9/29/88
HEPTACHLOR EPOXIDE UG/L	<0.05	<0.05	<0.05	<0.05	
HEXACHLOROBENZENE UG/L	<10	<5	<5	<5	
HEXACHLOROBUTADIENE UG/L	<10	<5	<5	<5	
HEXACHLOROCYCLOPENTADIENE UG/L	<10	<5	<5	<5	
HEXACHLOROETHANE UG/L	<10	<5	<5	<5	
HEXAMETHYLCYCLOTRISILOXANE UG/L				2	
INDENO(1,2,3-CD)PYRENE UG/L	<10	<5	<5	<5	
IRON MG/L	1.6	6.3	8	300	
IRON-F MG/L	0.045	<0.004	0.039	0.0064	
ISOPHORONE UG/L	<10	<5	<5	<5	
LEAD MG/L	<0.004	0.028	<0.004	0.084	
LEAD-F MG/L	<0.004	<0.004	<0.004	<0.004	
LITHIUM MG/L	0.25	0.4	0.42	0.91	
LITHIUM-F MG/L	0.27	0.39	0.42	0.37	
MAGNESIUM MG/L	9.1	11	12	400	
MAGNESIUM-F MG/L	7.2	6.6	6.4	5.5	

GROUNDWATER MONITORING WELL DATA

BRW-19

ANALYTE	7/23/87	10/16/87	12/07/87	3/07/88	9/29/88
MANGANESE MG/L	0.088	0.088	0.086	5.7	
MANGANESE-F MG/L	0.053	0.0042	0.0076	<0.001	
MERCURY MG/L	<0.0002	<0.0002	<0.0002	0.0003	
MERCURY-F MG/L	<0.0002	<0.0002	<0.0002	<0.0002	
METHOXYCHLOR UG/L	<0.5	<0.5	<0.5	<0.5	
METHYLENE CHLORIDE UG/L	1BJ	<5	<5	<5	
MOLYBDENUM MG/L	0.039	0.02	<0.01	<1	
MOLYBDENUM-F MG/L	0.029	0.025	<0.01	0.035	
N-NITROSO-DI-N-PROPYLAMINE UG/L	<10	<5	<5	<5	
N-NITROSODIPHENYLAMINE UG/L	<10	<5	<5	<5	
NAPHTHALENE UG/L	<10	<5	<5	<5	
NICKEL MG/L	0.035	0.021	0.045	<1	
NICKEL-F MG/L	0.023	<0.01	0.026	<0.01	
NIOBIUM MG/L	0.043	<0.007	0.026	<0.7	
NIOBIUM-F MG/L	0.038	0.016	0.017	<0.007	
NITRATE-NITROGEN MG/L	<2.26	0.21	<4.5	<4.5	

GROUNDWATER MONITORING WELL DATA

BRW-19

ANALYTE	7/23/87	10/16/87	12/07/87	3/07/88	9/29/88
NITROBENZENE UG/L	<10	<5	<5	<5	
PCB (AROCLOR-1016) UG/L	<0.5	<0.5	<0.5	<0.5	
PCB (AROCLOR-1221) UG/L	<0.5	<0.5	<0.5	<0.5	
PCB (AROCLOR-1232) UG/L	<0.5	<0.5	<0.5	<0.5	
PCB (AROCLOR-1242) UG/L	<0.5	<0.5	<0.5	<0.5	
PCB (AROCLOR-1248) UG/L	<0.5	<0.5	<0.5	<0.5	
PCB (AROCLOR-1254) UG/L	<1	<1	<1	<1	
PCB (AROCLOR-1260) UG/L	<1	<1	<1	<1	
PENTACHLOROPHENOL UG/L	<50	<25	<25	<25	
PH	8.5	8.8	8.4	8.9	8.6
	8.3	8.5	8.2	8.4	8.6
		8.1	8.2	8.4	8.6
		8.1	8.2	8.4	8.6
		8.2	8.2	8.5	8.2
PH - INIT	8.3	9.2	8	6.7	6.2
PHENANTHRENE UG/L	<10	<5	<5	<5	
PHENOL UG/L	<10	<5	<5	<5	
PHENOLS MG/L	0.004	0.009	0.005	<0.001	
PHOSPHORUS MG/L	<0.2	<0.2	<0.2	<20	

GROUNDWATER MONITORING WELL DATA

BRW-19

ANALYTE	7/23/87	10/16/87	12/07/87	3/07/88	9/29/88
PHOSPHORUS-F MG/L	<0.2	<0.2	<0.2	0.27	
POTASSIUM MG/L	15	19	22	190	
POTASSIUM-F MG/L	15	17	18	16	
PROBABLE HYDROCARBON #1 UG/L			6B		
PROBABLE HYDROCARBON #2 UG/L			5B		
PROBABLE HYDROCARBON #3 UG/L			7B		
PROBABLE HYDROCARBON #4 UG/L			7B		
PROBABLE HYDROCARBONS UG/L			33		
PYRENE UG/L	<10	<5	<5	<5	
REDOX MV	147	192	187	197	140
REDOX - INIT MV	150	262	153	190	184
SELENIUM MG/L	<0.005	<0.005	<0.005	<0.005	
SELENIUM-F MG/L	<0.005	<0.005	<0.005	<0.005	
SILICON MG/L	6.4	15	15	510	
SILICON-F MG/L	4.3	4.1	3.7	2.9	
SILVER MG/L	<0.006	<0.006	<0.006	<0.6	

GROUNDWATER MONITORING WELL DATA

BRW-19

ANALYTE	7/23/87	10/16/87	12/07/87	3/07/88	9/29/88
SILVER-F MG/L	<0.006	<0.006	<0.006	<0.006	
SODIUM MG/L	400	630	620	870	
SODIUM-F MG/L	780	630	630	680	
STRONTIUM MG/L	0.93	1	1.1	6.9	
STRONTIUM-F MG/L	0.94	0.93	1	0.81	
STYRENE UG/L	<5	<5	<5	<5	
SULFATE MG/L	770	760	960	256	
SULFUR UG/L				2	
T. CHLORDANE UG/L	<0.5	<0.5	<0.5	<0.5	
TECHNETIUM-99 PCI/L				1113	
TEMPERATURE DEG C	22	18.4	15.5	17.2	17.4
TEMPERATURE - INIT DEG C	19	17.6	15.2	13	17.8
TETRACHLOROETHENE UG/L	<5	<5	<5	<5	
THALLIUM MG/L	<0.01	<0.01	<0.01	<0.01	
THALLIUM-F MG/L	<0.01	<0.01	<0.01	<0.01	
THORIUM MG/L	<0.2	<0.2	<0.2	<20	

GROUNDWATER MONITORING WELL DATA

BRW-19

ANALYTE	7/23/87	10/16/87	12/07/87	3/07/88	9/29/88
THORIUM-234 PCI/L				4	
THORIUM-F MG/L	<0.2	<0.2	<0.2	<0.2	
TITANIUM MG/L	<0.003	0.053	0.034	8	
TITANIUM-F MG/L	<0.003	0.0053	<0.003	<0.003	
TOC MG/L	2.4	<1	<1	2.3	3
		<1	<1	3	2
		1	<1	2	2
		1	<1	1.2	2
TOLUENE UG/L	2BJ	<5	<5	<5	
TOTAL COLIFORM BACTERIA COL/100ML	0	0	0	<1	
TOTAL XYLENES UG/L	<5	<5	<5	<5	
TOX UG/L	19	34	13	24	30
		<10	8	15	94
		<10	31	22	58
		<10	42	42	10
TOXAPHENE UG/L	<1	<1	<1	<1	
TRANS-1,2-DICHLOROETHENE UG/L	<5	<5	<5	<5	
TRANS-1,3-DICHLOROPROPENE UG/L	<5	<5	<5	<5	
TRICHLOROETHENE UG/L	<5	<5	<5	<5	
TURBIDITY NTU	60	<180	<180	3700	
U-235 WT.%			0.79		

GROUNDWATER MONITORING WELL DATA

BRW-19

ANALYTE	7/23/87	10/16/87	12/07/87	3/07/88	9/29/88
UNKNOWN ALDOL-CONDENSATION PRO UG/L				4A	
UNKNOWNS UG/L		340	64	17	
URANIUM MG/L	0.005	0.004	<0.001	0.004	
URANIUM-F MG/L	0.004	<0.001	0.001	<0.001	
VANADIUM MG/L	<0.005	0.0081	0.013	<0.5	
VANADIUM-F MG/L	<0.005	<0.005	<0.005	<0.005	
VINYL ACETATE UG/L	<10	<10	<10	<10	
VINYL CHLORIDE UG/L	<10	<10	<10	<10	
ZINC MG/L	<0.001	0.051	0.037	1.6	
ZINC-F MG/L	<0.001	0.0094	<0.001	0.0011	
ZIRCONIUM MG/L	<0.005	0.006	0.016	<0.5	
ZIRCONIUM-F MG/L	<0.005	0.013	<0.005	<0.005	

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GROUNDWATER MONITORING WELL DATA

BRW-20

ANALYTE	7/20/87	10/19/87	12/08/87	3/07/88	10/12/88
1,1,1-TRICHLOROETHANE UG/L	150	130	150B	66	
1,1,2,2-TETRACHLOROETHANE UG/L	<5	<5	<5	<5	
1,1,2-TRICHLOROETHANE UG/L	<5	10	9	4J	
1,1-DICHLOROETHANE UG/L	43	48	41B	22	
1,1-DICHLOROETHENE UG/L	14	13	13	6	
1,2,4-TRICHLOROBENZENE UG/L	<10	<5	<5	<5	
1,2-DICHLOROBENZENE UG/L	<10	<5	<5	<5	
1,2-DICHLOROETHANE UG/L	<5	<5	<5	<5	
1,2-DICHLOROPROPANE UG/L	<5	<5	<5	<5	
1,3-DICHLOROBENZENE UG/L	<10	<5	<5	<5	
1,4-DICHLOROBENZENE UG/L	<10	<5	<5	<5	
2,4,5-T UG/L	<0.1	<0.1	<0.1	<0.1	
2,4,5-TP (SILVEX) UG/L	<0.1	<0.1	<0.1	<0.1	
2,4,5-TRICHLOROPHENOL UG/L	<50	<25	<25	<25	
2,4,6-TRICHLOROPHENOL UG/L	<10	<5	<5	<5	
2,4-D UG/L	<1	<1	<1	<1	

GROUNDWATER MONITORING WELL DATA
BRW-20

ANALYTE	7/20/87	10/19/87	12/08/87	3/07/88	10/12/88
2,4-DICHLOROPHENOL UG/L	<10	<5	<5	<5	
2,4-DIMETHYLPHENOL UG/L	<10	<5	<5	<5	
2,4-DINITROPHENOL UG/L	<50	<25	<25	<25	
2,4-DINITROTOLUENE UG/L	<10	<5	<5	<5	
2,6-DINITROTOLUENE UG/L	<10	<5	<5	<5	
2-BUTANONE UG/L	7JB	4BJ	<10	<10	
2-CHLOROETHYLVINYL ETHER UG/L	<10	<10	<10	<10	
2-CHLORONAPHTHALENE UG/L	<10	<5	<5	<5	
2-CHLOROPHENOL UG/L	<10	<5	<5	<5	
2-HEXANONE UG/L	<10	<10	<10	<10	
2-METHYLNAPHTHALENE UG/L	<10	<5	<5	<5	
2-METHYLPHENOL UG/L	<10	<5	<5	<5	
2-NITROANILINE UG/L	<50	<25	<25	<25	
2-NITROPHENOL UG/L	<10	<5	<5	<5	
3,3-DICHLOROBENZIDINE UG/L	<20	<10	<10	<10	
3-NITROANILINE UG/L	<50	<25	<25	<25	

GROUNDWATER MONITORING WELL DATA

BRW-20

ANALYTE	7/20/87	10/19/87	12/08/87	3/07/88	10/12/88
4,4-DDD UG/L	<0.1	<0.1	<0.1	<0.1	
4,4-DDE UG/L	<0.1	<0.1	<0.1	<0.1	
4,4-DDT UG/L	<0.1	<0.1	<0.1	<0.1	
4,6-DINITRO-2-METHYLPHENOL UG/L	<50	<25	<25	<25	
4-BROMOPHENYL-PHENYLETHER UG/L	<10	<5	<5	<5	
4-CHLORO-3-METHYLPHENOL UG/L	<10	<5	<5	<5	
4-CHLOROANILINE UG/L	<10	<5	<5	<5	
4-CHLOROPHENYL-PHENYLETHER UG/L	<10	<5	<5	<5	
4-METHYL-2-PENTANONE UG/L	<10	<10	<10	<10	
4-METHYLPHENOL UG/L	<10	<5	<5	<5	
4-NITROANILINE UG/L	<50	<25	<25	<25	
4-NITROPHENOL UG/L	<50	<25	<25	<25	
ACENAPHTHENE UG/L	<10	<5	<5	<5	
ACENAPHTHYLENE UG/L	<10	<5	<5	<5	
ACETONE UG/L	<10	<10	<10	<10	
ALDRIN UG/L	<0.05	<0.05	<0.05	<0.05	

GROUNDWATER MONITORING WELL DATA

BRW-20

ANALYTE	7/20/87	10/19/87	12/08/87	3/07/88	10/12/88
ALPHA ACTIVITY PCI/L	22.6	10.1	20	8	
ALPHA-BHC UG/L	<0.05	<0.05	<0.05	<0.05	
ALUMINUM MG/L	2.4	0.17	0.55	<0.02	
ALUMINUM-F MG/L	0.043	<0.02	0.021	<0.02	
ANTHRACENE UG/L	<10	<5	<5	<5	
ANTIMONY MG/L	<0.05	<0.05	<0.05	<0.05	
ANTIMONY-F MG/L	<0.05	<0.05	<0.05	<0.05	
ARSENIC MG/L	<0.005	<0.005	<0.005	<0.005	
ARSENIC-F MG/L	<0.005	<0.005	<0.005	<0.005	
BARIUM MG/L	0.068	0.034	0.099	0.032	
BARIUM-F MG/L	0.045	0.034	0.036	0.031	
BENZENE UG/L	<5	<5	<5	<5	
BENZO(A)ANTHRACENE UG/L	<10	<5	<5	<5	
BENZO(A)PYRENE UG/L	<10	<5	<5	<5	
BENZO(B)FLUORANTHENE UG/L	<10	<5	<5	<5	
BENZO(G,H,I)PERYLENE UG/L	<10	<5	<5	<5	

GROUNDWATER MONITORING WELL DATA

BRW-20

ANALYTE	7/20/87	10/19/87	12/08/87	3/07/88	10/12/88
BENZO(K)FLUORANTHENE UG/L	<10	<5	<5	<5	
BENZOIC ACID UG/L	<50	<25	<25	<25	
BENZYL ALCOHOL UG/L	<10	<5	<5	<5	
BERYLLIUM MG/L	<0.0003	<0.0003	<0.0003	<0.0003	
BERYLLIUM-F MG/L	<0.0003	0.0004	<0.0003	<0.0003	
BETA ACTIVITY PCI/L	17.8	19	33	12	
BETA-BHC UG/L	<0.05	<0.05	<0.05	<0.05	
BHT UG/L			12		
BIS(2-CHLOROETHOXY)METHANE UG/L	<10	<5	<5	<5	
BIS(2-CHLOROETHYL)ETHER UG/L	<10	<5	<5	<5	
BIS(2-CHLOROISOPROPYL)ETHER UG/L	<10	<5	<5	<5	
BIS(2-ETHYLHEXYL)PHTHALATE UG/L	<10	4J	<5	<5	
BORON MG/L	0.088	0.078	0.088	0.056	
BORON-F MG/L	0.087	0.084	0.068	0.055	
BROMODICHLOROMETHANE UG/L	<5	<5	<5	<5	
BROMOFORM UG/L	<5	<5	<5	<5	

GROUNDWATER MONITORING WELL DATA
BRW-20

ANALYTE	7/20/87	10/19/87	12/08/87	3/07/88	10/12/88
BROMOMETHANE UG/L	<10	<10	<10	<10	
BUTYLBENZYLPHTHALATE UG/L	<10	<5	<5	<5	
CADMIUM MG/L	<0.003	<0.003	<0.003	<0.003	
CADMIUM-F MG/L	<0.003	<0.003	0.0032	<0.003	
CALCIUM MG/L	200	180	170	170	
CALCIUM-F MG/L	200	180	160	170	
CARBON DISULFIDE UG/L	<5	<5	<5	<5	
CARBON TETRACHLORIDE UG/L	<5	<5	<5	<5	
CHLORIDE MG/L	30	23	23	40	
CHLOROBENZENE UG/L	<5	<5	<5	<5	
CHLOROETHANE UG/L	<10	<10	<10	<10	
CHLOROFORM UG/L	2J	4BJ	3BJ	2JB	
CHLOROMETHANE UG/L	<10	<10	<10	<10	
CHROMIUM MG/L	<0.01	<0.01	0.012	<0.01	
CHROMIUM-F MG/L	<0.01	<0.01	0.016	<0.01	
CHRYSENE UG/L	<10	<5	<5	<5	

GROUNDWATER MONITORING WELL DATA

BRW-20

ANALYTE	7/20/87	10/19/87	12/08/87	3/07/88	10/12/88
CIS-1,3-DICHLOROPROPENE	<5	<5	<5	<5	
UG/L					
COBALT	<0.005	<0.005	<0.005	<0.005	
MG/L					
COBALT-F	<0.005	<0.005	<0.005	<0.005	
MG/L					
CONDUCTIVITY	960	850	750	931	1040
UMHO/CM	1040	1040	931	973	949
	1040	1040	920	935	1050
	1040	1040	915	936	1040
	1040	1040	917	940	1040
					949
					1040
					1040
					1040
					1040
CONDUCTIVITY - INIT	960	800	760	947	938
UMHO/CM					923
COPPER	0.014	<0.004	<0.004	<0.004	
MG/L					
COPPER-F	0.0091	<0.004	<0.004	<0.004	
MG/L					
CYCLOHEXANONE			2		
UG/L					
DELTA-BHC	<0.05	<0.05	<0.05	<0.05	
UG/L					
DEPTH	37.8	36.5	40.7	40.1	35.9
FEET					35.9
DI-N-BUTYLPHTHALATE	<10	<5	<5	<5	
UG/L					
DI-N-OCTYLPHTHALATE	<10	<5	0.4J	0.3JB	
UG/L					
DIACETONE ALCOHOL		560B	2000		
UG/L					

GROUNDWATER MONITORING WELL DATA

BRW-20

ANALYTE	7/20/87	10/19/87	12/08/87	3/07/88	10/12/88
DIBENZ(A,H)ANTHRACENE UG/L	<10	<5	<5	<5	
DIBENZOFURAN UG/L	<10	<5	<5	<5	
DIBROMOCHLOROMETHANE UG/L	<5	<5	<5	<5	
DIELDRIN UG/L	<0.1	<0.1	<0.1	<0.1	
DIETHYLPHTHALATE UG/L	<10	<5	<5	<5	
DIMETHYLPHTHALATE UG/L	<10	<5	<5	<5	
DISSOLVED OXYGEN PPM	1.6	1.6	3.4	4.6	1.1 1.2
DISSOLVED OXYGEN - INIT PPM	2.3	1.8	4	1.9	0.8 0.7
ENDOSULFAN I UG/L	<0.05	<0.05	<0.05	<0.05	
ENDOSULFAN II UG/L	<0.1	<0.1	<0.1	<0.1	
ENDOSULFAN SULFATE UG/L	<0.1	<0.1	<0.1	<0.1	
ENDRIN UG/L	<0.1	<0.1	<0.1	<0.1	
ENDRIN KETONE UG/L	<0.1	<0.1	<0.1	<0.1	
ETHYLBENZENE UG/L	<5	<5	<5	<5	
FLUORANTHENE UG/L	<10	<5	<5	<5	
FLUORENE UG/L	<10	<5	<5	<5	

GROUNDWATER MONITORING WELL DATA

BRW-20

ANALYTE	7/20/87	10/19/87	12/08/87	3/07/88	10/12/88
FLUORIDE MG/L	0.2	0.3	0.7	0.2	
FREON 113 UG/L		23	42B	42	
GAMMA-BHC (LINDANE) UG/L	<0.05	<0.05	<0.05	<0.05	
HEPTACHLOR UG/L	<0.05	<0.05	<0.05	<0.05	
HEPTACHLOR EPOXIDE UG/L	<0.05	<0.05	<0.05	<0.05	
HEXACHLOROBENZENE UG/L	<10	<5	<5	<5	
HEXACHLOROBUTADIENE UG/L	<10	<5	<5	<5	
HEXACHLOROCYCLOPENTADIENE UG/L	<10	<5	<5	<5	
HEXACHLOROETHANE UG/L	<10	<5	<5	<5	
INDENO(1,2,3-CD)PYRENE UG/L	<10	<5	<5	<5	
IRON MG/L	1.4	0.16	0.5	0.02	
IRON-F MG/L	0.011	<0.004	<0.004	0.0065	
ISOPHORONE UG/L	<10	<5	<5	<5	
LEAD MG/L	<0.004	<0.004	<0.004	0.006	
LEAD-F MG/L	<0.004	<0.004	<0.004	<0.004	
LITHIUM MG/L	0.0088	0.0051	0.005	<0.004	

GROUNDWATER MONITORING WELL DATA

BRW-20

ANALYTE	7/20/87	10/19/87	12/08/87	3/07/88	10/12/88
LITHIUM-F MG/L	0.0043	0.0053	<0.004	<0.004	
MAGNESIUM MG/L	20	20	16	17	
MAGNESIUM-F MG/L	19	20	15	17	
MANGANESE MG/L	0.27	0.18	0.16	0.11	
MANGANESE-F MG/L	0.22	0.17	0.14	0.12	
MERCURY MG/L	<0.0002	<0.0002	<0.0002	<0.0002	
MERCURY-F MG/L	<0.0002	<0.0002	<0.0002	<0.0002	
METHOXYCHLOR UG/L	<0.5	<0.5	<0.5	<0.5	
METHYLENE CHLORIDE UG/L	2JB	<5	<5	<5	
MOLYBDENUM MG/L	<0.01	<0.01	<0.01	<0.01	
MOLYBDENUM-F MG/L	<0.01	<0.01	<0.01	<0.01	
N-NITROSO-DI-N-PROPYLAMINE UG/L	<10	<5	<5	<5	
N-NITROSODIPHENYLAMINE UG/L	<10	<5	<5	<5	
NAPHTHALENE UG/L	<10	<5	<5	<5	
NICKEL MG/L	<0.01	<0.01	0.011	<0.01	
NICKEL-F MG/L	<0.01	<0.01	<0.01	<0.01	

GROUNDWATER MONITORING WELL DATA

BRW-20

ANALYTE	7/20/87	10/19/87	12/08/87	3/07/88	10/12/88
NIOBIUM MG/L	0.01	<0.007	<0.007	<0.007	
NIOBIUM-F MG/L	<0.007	<0.007	<0.007	<0.007	
NITRATE-NITROGEN MG/L	2.94	2.61	1.6	2.28	
NITROBENZENE UG/L	<10	<5	<5	<5	
PCB (AROCLOR-1016) UG/L	<0.5	<0.5	<0.5	<0.5	
PCB (AROCLOR-1221) UG/L	<0.5	<0.5	<0.5	<0.5	
PCB (AROCLOR-1232) UG/L	<0.5	<0.5	<0.5	<0.5	
PCB (AROCLOR-1242) UG/L	<0.5	<0.5	<0.5	<0.5	
PCB (AROCLOR-1248) UG/L	<0.5	<0.5	<0.5	<0.5	
PCB (AROCLOR-1254) UG/L	<1	<1	<1	<1	
PCB (AROCLOR-1260) UG/L	<1	<1	<1	<1	
PENTACHLOROPHENOL UG/L	<50	<25	<25	<25	
PH	7.3	7.7	7.6	7.2	6.8
	7	6.9	6.8	6.9	6.7
	7	6.9	6.8	6.9	6.8
	7.4	7	6.9	6.9	6.8
	7	6.9	6.8	6.9	6.8
					6.7
					6.8
					6.8
					6.8
					6.8
PH - INIT	7.1	7.9	7.9	7.2	6.9

GROUNDWATER MONITORING WELL DATA

BRW-20

ANALYTE	7/20/87	10/19/87	12/08/87	3/07/88	10/12/88
PHENANTHRENE UG/L	<10	<5	<5	<5	
PHENOL UG/L	<10	<5	<5	<5	
PHENOLS MG/L	<0.001	0.003	<0.001	<0.001	
PHOSPHORUS MG/L	<0.2	<0.2	<0.2	<0.2	
PHOSPHORUS-F MG/L	<0.2	<0.2	<0.2	<0.2	
POTASSIUM MG/L	3.8	1.1	3.4	3	
POTASSIUM-F MG/L	3.2	<0.6	5	2.6	
PROBABLE HYDROCARBON #1 UG/L			6B		
PROBABLE HYDROCARBON #2 UG/L			4B		
PROBABLE HYDROCARBON #3 UG/L			5B		
PROBABLE HYDROCARBON #4 UG/L			8		
PROBABLE HYDROCARBONS UG/L			53		
PYRENE UG/L	<10	<5	<5	<5	
REDOX MV	261	265	289	196	198 196
REDOX - INIT MV	250	223	206	203	92 102
SELENIUM MG/L	<0.005	<0.005	<0.005	<0.005	

GROUNDWATER MONITORING WELL DATA

BRW-20

ANALYTE	7/20/87	10/19/87	12/08/87	3/07/88	10/12/88
SELENIUM-F MG/L	<0.005	<0.005	<0.005	<0.005	
SILICON MG/L	8.4	4.5	4.6	3.6	
SILICON-F MG/L	4.4	4.2	4	3.5	
SILVER MG/L	<0.006	<0.006	<0.006	<0.006	
SILVER-F MG/L	<0.006	<0.006	<0.006	<0.006	
SODIUM MG/L	16	13	14	15	
SODIUM-F MG/L	16	13	14	15	
STRONTIUM MG/L	0.26	0.21	0.19	0.19	
STRONTIUM-F MG/L	0.26	0.21	0.19	0.19	
STYRENE UG/L	<5	<5	<5	<5	
SULFATE MG/L	112	111	92	97	
T. CHLORDANE UG/L	<0.5	<0.5	<0.5	<0.5	
TEMPERATURE DEG C	18	15.2	16	16.7	17.5 17.4
TEMPERATURE - INIT DEG C	19	12.3	16.5	17.2	16.3 16.3
TETRACHLOROETHENE UG/L	<5	1J	<5	<5	
THALLIUM MG/L	<0.01	<0.01	<0.01	<0.01	

GROUNDWATER MONITORING WELL DATA

BRW-20

ANALYTE	7/20/87	10/19/87	12/08/87	3/07/88	10/12/88
THALLIUM-F MG/L	<0.01	<0.01	<0.01	<0.01	
THORIUM MG/L	<0.2	<0.2	<0.2	<0.2	
THORIUM-F MG/L	<0.2	<0.2	<0.2	<0.2	
TITANIUM MG/L	0.068	0.0043	0.015	<0.003	
TITANIUM-F MG/L	<0.003	0.0046	0.0066	<0.003	
TOC MG/L	3.3 4 3.5 3	3 3.4 3.2 3.2	2.4 2.2 2.3 2.3	3.1 3.2 3.5 3	4 5 5 5 5 5 5 4
TOLUENE UG/L	1JB	<5	<5	<5	
TOTAL COLIFORM BACTERIA COL/100ML	0	6	8	6	
TOTAL XYLENES UG/L	<5	<5	<5	<5	
TOX UG/L	121 123 100 119	151 157 174 147	146 158 131 133	93 101 71 93	37 38 72 76 54 92 69 68
TOXAPHENE UG/L	<1	<1	<1	<1	
TRANS-1,2-DICHLOROETHENE UG/L	<5	<5	<5	<5	

GROUNDWATER MONITORING WELL DATA

BRW-20

ANALYTE	7/20/87	10/19/87	12/08/87	3/07/88	10/12/88
TRANS-1,3-DICHLOROPROPENE UG/L	<5	<5	<5	<5	
TRICHLOROETHANE UG/L				2	
TRICHLOROETHENE UG/L	<5	2J	<5	<5	
TURBIDITY NTU	45	6.4	10.7	0.35	
U-235 WT.%	1.03	1.05			
UNKNOWN UG/L	7B			7	
UNKNOWN FREON UG/L		23			
UNKNOWNS UG/L		40	55		
URANIUM MG/L	0.039	0.037	0.029	0.039	
URANIUM-F MG/L	0.032	0.03	0.027	0.062	
VANADIUM MG/L	<0.005	<0.005	<0.005	<0.005	
VANADIUM-F MG/L	<0.005	<0.005	<0.005	<0.005	
VINYL ACETATE UG/L	<10	<10	<10	<10	
VINYL CHLORIDE UG/L	<10	<10	<10	<10	
ZINC MG/L	0.019	0.029	0.012	<0.001	
ZINC-F MG/L	0.011	0.029	0.0076	<0.001	

GROUNDWATER MONITORING WELL DATA

BRW-20

ANALYTE	7/20/87	10/19/87	12/08/87	3/07/88	10/12/88
ZIRCONIUM MG/L	<0.005	<0.005	<0.005	<0.005	
ZIRCONIUM-F MG/L	<0.005	<0.005	<0.005	<0.005	

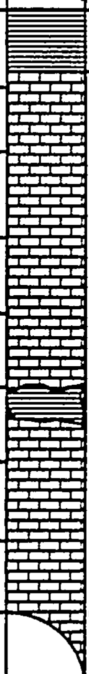
APPENDIX B

GERAGHTY & MILLER, INC.
Ground-Water Consultants

LITHOLOGIC LOG

BORING NO.	BRW-2
PROJECT	ORGDP Monitor-Well Installation Program - Phase I

LOCATION	K-25 PLANT COORDINATES	SURFACE ELEVATION	TOTAL DEPTH
K-25 Plant, K-1064-G	SOUTH 22,765.63 WEST 2,358.91	766.01 ft msl	40.0 ft
GEOLOGIST	**SAMPLE INTERVAL**	**SAMPLE TYPE**	**DATE WELL COMPLETED**
D. Hubert/G. Weiss	5 feet	Drill Cuttings	12-18-85
DRILLER	**DRILLING CONTRACTOR**	**DRILLING METHOD**	**RIG TYPE**
A. Pippin	Alsay, Inc.	Air Rotary	Failing 1250
PURPOSE OF BORING	**GEOPHYSICAL CONTRACTOR**	**GEOPHYSICAL LOGS**	
Monitor Well	Century Geophysical	Natural Gamma, Density, Single Arm Caliper, Gamma-Gamma Compensated Density	



DEPTH IN FEET	DESCRIPTION	COMMENTS
0	CLAY (100%), brown, plastic, contains rock fragments	
	LIMESTONE (100%), green-gray, trace of light gray, contains some red-brown, calcareous, silty shale.	
10		
20		
	25.0' - 27.0' Clay-filled solution cavity.	
30		Borehole produced water at 30 ft
40		
50		
60		
70		
80		
90		

SHEET 1 OF 1

GERAGHTY & MILLER, INC.
Ground-Water Consultants

LITHOLOGIC LOG

BORING NO.	BRW-3
PROJECT	ORGDP Monitor-Well Installation Program - Phase I

LOCATION	K-25 PLANT COORDINATES	SURFACE ELEVATION	TOTAL DEPTH
K-25 Plant, K-1064-G	SOUTH 22,538.49 WEST 2,199.06	763.44 ft msl	35.0 ft
GEOLOGIST	**SAMPLE INTERVAL**	**SAMPLE TYPE**	**DATE WELL COMPLETED**
G. Weiss	5 feet	Drill Cuttings	12-12-85
DRILLER	**DRILLING CONTRACTOR**	**DRILLING METHOD**	**RIG TYPE**
A. Pippin	Alsay, Inc.	Air Rotary - Hammer	Failing 1250
PURPOSE OF BORING	**GEOPHYSICAL CONTRACTOR**	**GEOPHYSICAL LOGS**	
Monitor Well	Century Geophysical	Natural Gamma, Density, Single Arm Caliper, Gamma-Gamma Compensated Density	

DEPTH IN FEET	GRAPHIC LOG	DESCRIPTION	COMMENTS
0		FILL (100%), orange clay and limestone aggregate.	
10		LIMESTONE (100%), dark gray to black micrite. 10.0' - 25.0' Green-gray, some secondary calcite.	
20			Rapid rod drop at 19 ft to 21 ft, possible fracture or solution cavity Circulation lost at 25 ft
30			
40			
50			
60			
70			
80			
90			

SHEET 1 OF 1

GERAGHTY & MILLER, INC.
Ground-Water Consultants

LITHOLOGIC LOG

BORING NO.	BRW-4
PROJECT	ORGDP Monitor-Well Installation Program - Phase I

LOCATION	K-25 PLANT COORDINATES	SURFACE ELEVATION	TOTAL DEPTH
K-25 Plant, K-1064-G	SOUTH 22,706.51 WEST 2,084.31	781.31 ft msl	75.0 ft
GEOLOGIST	**SAMPLE INTERVAL**	**SAMPLE TYPE**	**DATE WELL COMPLETED**
G. Weiss	5 feet	Drill Cuttings	12-19-85
DRILLER	**DRILLING CONTRACTOR**	**DRILLING METHOD**	**RIG TYPE**
A. Pippin	Alsay, Inc.	Air Rotary - Hammer	Failing 1250
PURPOSE OF BORING	**GEOPHYSICAL CONTRACTOR**	**GEOPHYSICAL LOGS**	
Monitor Well	Century Geophysical	Natural Gamma, Density, Single Arm Caliper, Gamma-Gamma Compensated Density	

DEPTH IN FEET	GRAPHIC LOG	DESCRIPTION	COMMENTS
0		WEATHERED LIMESTONE (100%), gray, micritic, with minor amounts of low plasticity, brown clay.	
10		SHALE (100%), gray and maroon, silty, calcareous.	
		15.0' - 20.0' Contains trace (<1%) micritic, fossiliferous limestone.	
20		20.0' - 50.0' Green, gray and maroon, occasionally mottled, silty, calcareous, with trace (<1%) green-gray, micritic limestone.	
30			
40			
50		50.0' - 55.0' Slight increase (<10%) in presence of limestone.	
		55.0' - 65.0' Olive-green and maroon, silty, calcareous shale.	
60			Borehole produced water at 61 ft
		65.0' - 75.0' Contains some nodular, yellow limestone.	
70			
80			
90			

SHEET 1 OF 1

GERAGHTY & MILLER, INC.
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LITHOLOGIC LOG

BORING NO.	BRW-17
PROJECT	ORGDP Monitor-Well Installation Program - Phase II

LOCATION	K-25 PLANT COORDINATES	SURFACE ELEVATION	TOTAL DEPTH
K-25 Plant, K-1064-G	SOUTH 22,679.59 WEST 2,486.77	754.03 ft msl	40.0 ft
GEOLOGIST	**SAMPLE INTERVAL**	**SAMPLE TYPE**	**DATE WELL COMPLETED**
G. Weiss	5 feet	Cuttings	12-17-86
DRILLER	**DRILLING CONTRACTOR**	**DRILLING METHOD**	**RIG TYPE**
D. Wood	Graves Drilling	Air Rotary	Dresser T-70-W
PURPOSE OF BORING	**GEOPHYSICAL CONTRACTOR**	**GEOPHYSICAL LOGS**	
Monitor Well	None	None	

DEPTH IN FEET	DESCRIPTION	COMMENTS
0	FILL (100%), limestone gravel.	
	CLAY (100%), red and brown, silty in places, some weathered limestone.	
10		
	LIMESTONE (100%), gray, green-gray and blue, micritic, stylolitic in places.	
20		
30	30.0' - 31.0' Cavity.	Borehole produced water (~2-3 gpm) from cavity
	35.0' - 40.0' Shale (90%), blue-gray, calcareous; limestone (10%).	Fractured zone from 37 ft to 38 ft
40		
50		
60		
70		
80		
90		

SHEET 1 OF 1

GERAGHTY & MILLER, INC.
Ground-Water Consultants

LITHOLOGIC LOG

BORING NO.	BRW-18
PROJECT	ORGDP Monitor-Well Installation Program - Phase II

LOCATION	K-25 PLANT COORDINATES	SURFACE ELEVATION	TOTAL DEPTH
K-25 Plant, K-1064-G	SOUTH 22,811.19 WEST 2,236.21	774.20 ft msl	50.0 ft
GEOLOGIST	**SAMPLE INTERVAL**	**SAMPLE TYPE**	**DATE WELL COMPLETED**
G. Weiss	5 feet	Cuttings	12-02-86
DRILLER	**DRILLING CONTRACTOR**	**DRILLING METHOD**	**RIG TYPE**
D. Wood	Graves Drilling	Air Rotary	Dresser T-70-W
PURPOSE OF BORING	**GEOPHYSICAL CONTRACTOR**	**GEOPHYSICAL LOGS**	
Monitor Well	None	None	

DEPTH IN FEET	GRAPHIC LOG	DESCRIPTION	COMMENTS
0		FILL (100%), limestone gravel.	
		LIMESTONE (100%), brown, micritic, weathered in places, some clay seams.	
10		5.0' - 10.0' Limestone (80%), green gray, micritic, weathered in places; shale (20%), maroon, calcareous.	
		10.0' - 15.0' Limestone (100%).	
20		SHALE (100%), mottled green and maroon, calcareous.	
30		32.0' - 35.0' Shale (50%); limestone (50%).	
		35.0' - 45.0' Shale (75%); limestone (25%).	
40			Borehole produced water (<1 gpm) at 42 ft
		45.0' - 50.0' Limestone (75%); shale (25%).	
50			
60			
70			
80			
90			

GERAGHTY & MILLER, INC.
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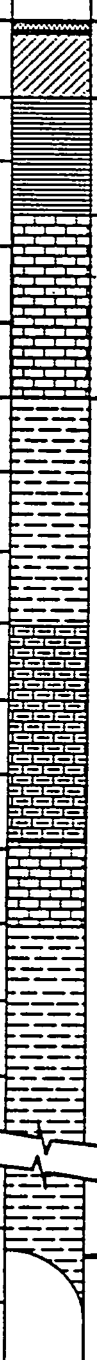
LITHOLOGIC LOG

BORING NO.	BRW-19
PROJECT	ORGDP Monitor-Well Installation Program - Phase II

LOCATION	K-25 PLANT COORDINATES	SURFACE ELEVATION	TOTAL DEPTH
K-25 Plant, K-1064-G	SOUTH 22,796.08 WEST 2,035.00	780.56 ft msl	91.0 ft
GEOLOGIST	**SAMPLE INTERVAL**	**SAMPLE TYPE**	**DATE WELL COMPLETED**
G. Weiss	5 feet	Cuttings	12-05-86
DRILLER	**DRILLING CONTRACTOR**	**DRILLING METHOD**	**RIG TYPE**
D. Wood	Graves Drilling	Air Rotary	Dresser T-70-W
PURPOSE OF BORING	**GEOPHYSICAL CONTRACTOR**	**GEOPHYSICAL LOGS**	
Monitor Well	None	None	



DEPTH IN FEET	DESCRIPTION	COMMENTS
0	ASPHALT	
	FILL (100%), limestone gravel with some clay.	
10	CLAY (100%), red and brown, silty in places.	
20	LIMESTONE (100%), green-gray, blue and brown, micritic, weathered in places.	
30	SHALE (75%), dark gray, calcareous; limestone (25%), interbedded or interlaminated with the shale.	
	35.0' - 40.0' Shale (75%); limestone (25%).	
40	40.0' - 50.0' Limestone (50%); shale (50%).	
50	55.0' - 60.0' Limestone (75%); shale (25%).	
	55.0' - 60.0' Limestone (100%); green-gray and maroon, micritic.	
60	60.0' - 91.0' Shale (90%); limestone (10%).	
70		
90		Borehole produced water (<1 gpm) at approximately 80 ft
100		

SHEET 1 OF 1

GERAGHTY & MILLER, INC.
Ground-Water Consultants

LITHOLOGIC LOG

BORING NO.	BRW-20
PROJECT	ORGDP Monitor-Well Installation Program - Phase II

LOCATION	K-25 PLANT COORDINATES	SURFACE ELEVATION	TOTAL DEPTH
K-25 Plant, K-1064-G	SOUTH 22,561.35 WEST 2,030.52	776.54 ft msl	65.0 ft
GEOLOGIST	**SAMPLE INTERVAL**	**SAMPLE TYPE**	**DATE WELL COMPLETED**
G. Weiss	5 feet	Cuttings	12-17-86
DRILLER	**DRILLING CONTRACTOR**	**DRILLING METHOD**	**RIG TYPE**
D. Wood	Graves Drilling	Air Rotary	Dresser T-70-W
PURPOSE OF BORING	**GEOPHYSICAL CONTRACTOR**	**GEOPHYSICAL LOGS**	
Monitor Well	None	None	

DEPTH IN FEET	GRAPHIC LOG	DESCRIPTION	COMMENTS
0		ASPHALT	
		CLAY (100%), red, plastic, contains some limestone fragments.	
10		LIMESTONE (95%), green-gray with some light gray, contains some secondary calcite, cherty in places; shale (5%), red-brown, calcareous, silty.	Small fractured zone (<1 ft) at 11.5 ft No returns from 11.5 to 20 ft
20			
30			Fractured zone from 33 to 35 ft
40			
50			
		55.0' - 57.0' Mud-filled cavity.	Borehole produced water (<1 gpm) from 55 ft to 57 ft
60			
70			
80			
90			